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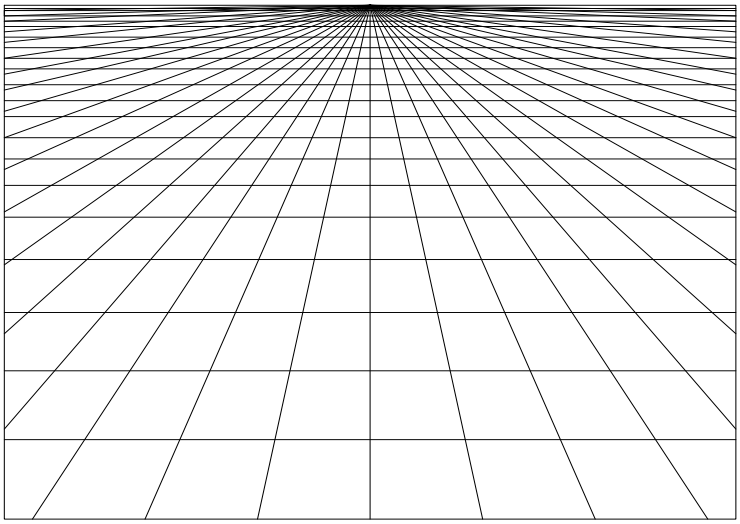

Assessing Nuclear Risk:

A case study of the Nordic embassies in Tokyo and their responses to the Fukushima nuclear crisis

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Summary

This thesis is a study of the Nordic embassies in Tokyo and the different ways in which they chose to respond to the nuclear crisis following the massive earthquake and tsunami off the Pacific coast of Tohoku, Japan, on March 11, 2011. Although the embassies technically were subject to the same level of threat, their individual crisis responses have exhibited varying levels of precaution. For example, while the Swedish and Danish embassies remained fully operational in Tokyo, the Norwegian and Finnish embassies relocated most or all of their staff to provisional operations further away from the nuclear hazard. As a researcher in the field of Science and Technology Studies (STS), the wide display of responses raises an interesting question concerning the basic circumstances of nuclear risk, for how can the same circumstances generate such different scientific assessments and management strategies? What underlying considerations particular to the individual embassy can explain the Nordic variation in crisis responses?

In accordance with the teachings of Dorothy Nelkin, the uncertain nature of nuclear radiation compounds the difficulties of risk assessment and leaves considerable scope for subjective factors to enter both scientific interpretations and public perceptions. With regard to the Nordic crisis responses, it becomes clear that various political, reputational, and economic interests have influenced the different outcomes. Yet, as it turns out, even coinciding interests may produce differing risk evaluations. By way of a methodical application of Cultural Theory (c.f. Mary Douglas et al.), this study shows how embassy diplomats with few personal ties to their Japanese communities have been more prone to opt for a higher degree of precaution, i.e. embassy relocation, than those more integrated in Japanese society.

The interesting angle of a Nordic-specific comparison (as opposed to, say, a comparison between the Norwegian and Japanese crisis responses) is the fact that it becomes hard to argue “Culture” as the main explanatory factor behind the differences. As the thesis demonstrates, concerns about risk may depend less on culture at large than on social, contextual, or political biases.

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1. Introduction

This thesis is a study of the Nordic embassies in Tokyo and the different ways in which they chose to respond to the nuclear crisis following the massive earthquake and tsunami off the Pacific coast of Tohoku, Japan, on March 11, 2011. More generally, this thesis examines the porous relationship between science and policy and the complex practices of assessing nuclear risk.

Although the situation at the Fukushima nuclear plant, as of November 2011, remains very serious (International Atomic Energy Agency, 2011), the general feeling of urgency around the situation has died down and operations in Tokyo have resumed normal activity. In the weeks following the initial outbreak, however, the reactions among the foreign delegations to Japan were diverse; while some embassies (for example the Swedish and Danish) saw no need to evacuate the capital, others (such as the Norwegian and the Finnish embassies) rushed to temporarily close down or relocate out of Tokyo while recommending their nationals to do the same. As a researcher in the field of Science and Technology Studies (STS), this wide display of responses raises an interesting question concerning the basic circumstances of nuclear risk, for how can the same circumstances generate such different scientific assessments and management strategies? Technically the embassies were all subject to the same level of threat and were otherwise seemingly under equal conditions, yet the security assessments and precautionary measures varied greatly from embassy to embassy. The aim of this thesis is to explain how and why such divergent policies were adopted.

The focus of the study shall be on the Nordic embassies in Tokyo, that is to say, the crisis responses of the Norwegian, Swedish, Finnish, and Danish embassies respectively. My point of departure is the Norwegian Embassy, whose particular management will be given special emphasis – partly due to personal affiliation as a Norwegian national myself, but mainly in order to gain a thorough understanding of the dealings and processes within an embassy in general. Such insight is important as we venture on to an overall comparative analysis of the Nordic managements. Although close in political relations and in national cultures, the Nordic embassies have exhibited varying degrees of precaution in their crisis managements. What underlying considerations particular to the individual embassy can explain the Nordic variation in crisis responses? The interesting angle of a Nordic-specific comparison (as

opposed to, say, a comparison between the Norwegian and Japanese crisis responses) is the fact that it becomes hard to argue "Culture" as the main explanatory factor behind the differences. As this study shall demonstrate, concerns about risk may depend less on culture at large than on social, contextual, or political biases. In fact, not even among scientists does there seem to exist a uniform understanding of risk.

The Government of Japan has formally decided to use the term "Great East Japan Earthquake" to refer collectively to the disasters due to the March 11 earthquake, tsunami, and resultant nuclear plant accidents (Ministry of Foreign Affairs of Japan, 2011). However, as this thesis mainly deals with the nuclear consequences and not so much the earthquake-tsunami outset, the term does not adequately reflect the objectives of this study. Instead, this thesis will refer to the incidents collectively as the "Great East Japan *Crisis*" – or more often, simply as "the crisis".

1.1 The Great East Japan Crisis

At 14:46 on March 11, 2011, an earthquake occurred 130 km off the Pacific coast of Japan's Tohoku-district, approximately 380 km north of Tokyo. The initial shock measured at a magnitude of 9.0 on the Richter scale, making it the fourth strongest quake in recorded history (The Heritage Foundation, 2011). Following the quake, a massive tsunami swept across the northeast coast of Japan causing widespread devastation. An overwhelming number of people were displaced from their homes in the Tohoku region, and more than 15.000 lives were lost while 4.000 people remain missing (Ministry of Foreign Affairs of Japan, 2011).

In addition to loss of life and destruction of infrastructure, the earthquake and tsunami caused a number of nuclear accidents, primarily at three reactors in the Fukushima I Nuclear Power Plant maintained by the Tokyo Electric Power Company (TEPCO). For fear of long-term radiation hazards, the Japanese government ordered the mass evacuation of residents from within a 20-km mandatory evacuation zone around the Fukushima power plant (Nuclear and Industrial Safety Agency, Japan, 2011).

On April 12, the International Atomic Energy Agency (IAEA) reported that the Fukushima nuclear accident was rated as a Level 7 on the INES scale, which is the most serious scale value used to describe "a major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures".

Prior to Fukushima, the Chernobyl disaster was the only level 7 accident on record. As of June 2011, water is still being poured into the damaged reactors to cool the melting fuel rods and the situation "remains very serious" (International Atomic Energy Agency, 2011).

In its security measures regarding the nuclear threat, Japan has been careful to act in accordance with IAEA nuclear safety standards (The Japan Times, 2011). One of the statutory functions of the IAEA is to establish "standards of safety for protection of health, life and property against ionizing radiation" (International Atomic Energy Agency, 2011). However, these safety standards are "non-binding" on national regulations; they may be adopted by IAEA member states "at their own discretion" (International Atomic Energy Agency, 2011). There is in other words no single international instrument of a legally binding nature to offer guidance for the harmonization of national laws and regulations. As a result, the international reactions have varied greatly, although it is safe to say that the foreign directives have shown a higher degree of precaution than the Japanese.

On March14, France became the first country to advise its nationals to leave Tokyo, citing the nuclear risk associated with the accident at the Fukushima power plant (Financial Times, 2011). In the following days, several embassies of other countries repeated similar advice. In the 11 days following the March 11 quake and tsunami, over 161.000 foreigners left Japan, an eightfold increase from about 20.000 during the same period in 2010 (Economic Times, 2011). And these figures do not account for all those who relocated *within* Japan.

As a matter of fact, the massive exodus of foreigners caused a new word – *fly-jin* – to enter the Japanese vocabulary. A pun on the word *gai-jin*, the Japanese word for foreigners, fly-jin refers to the flight of the foreigners in response to the nuclear threat, but also their desertion of the Japanese people in their times of hardship (Wall Street Journal, 2011). Needless to say, the connotation is not exactly complementary. It becomes clear that many of the foreign reactions to the nuclear threat involve a high degree of social stigma in the Japanese communities. Such social factors become an important focus when studying the causes behind the different Nordic risk assessments and crisis responses.

1.2 Research questions

In connection with the Great East Japan Crisis, each of the Nordic regimes has issued official travel recommendations to their citizens that have been updated in accordance with the

situations development. However, a comparison among the Nordic travel recommendations shows considerable discrepancies with regard to levels of precaution; although all the Nordic countries at one point or another advised that their citizens avoid all travel to Japan, the duration of the restriction ranged all from one week to one month. Other types of security directives – regarding issues such as potassium iodide tablets as a preventative measure against radiation poisoning, or specially arranged flights to transport citizens out of Japan – have differed as well, as have security measures taken by the embassies themselves. For example, while the Swedish and Danish embassies remained fully operational in Tokyo, the Norwegian and Finnish embassies relocated most or all of their staff to provisional operations further away from the nuclear hazard.

The focus of this thesis is on the Nordic embassies in Tokyo. However, certain security directives, for example the official travel recommendations, are formally issued by the foreign ministries in the respective capitals. The embassies in Tokyo are nevertheless taken into consultation. In this connection, it would be interesting to find out to what degree the respective embassies in Tokyo are involved in devising the official travel recommendations. Are the embassy opinions in accordance with the ministry directives? To what extent are the embassies obliged to follow the official travel recommendations in their own operations? How are such official directives devised? On what grounds are decisions regarding embassy security made? How does, or does not, the individual embassy's crisis response reflect the attitudes among its own staff? What can explain the variation in crisis responses? Specifically, the aim of my study will be to answer the following research questions:

(1) In connection with the Fukushima nuclear crisis, how has the Norwegian Embassy responded to the situation, and what considerations and interests have influenced this crisis response?

(2) Seeing that the Nordic embassies have responded to the crisis in different ways, how can such different strategies be explained?

Before going into further detail on each of the research questions, it is important to explain the particular denotation of "crisis response" in the context of this study. Throughout the thesis, "crisis response" refers to two main categories of investigation: official security directives to citizens (i.e. travel advice, recommendations concerning iodide tablets, and the

arrangement of special flights out of Japan) and the respective embassy's own security precautions (i.e. the relocation of embassy operations and the management of embassy personnel).

The first research question (1), then, addresses the Norwegian crisis management exclusively. This is in order to gain particular insights into the decision-making processes and internal interests of the Norwegian Embassy, which will serve as a useful reference in the further analysis. It is important to note that the objective of this first research question is simply to map out the various dealings and interests that have influenced the Norwegian crisis response; the interpretive analysis shall mainly take place in conjunction with the overall comparison of the Nordic responses, which falls under the domain of the second research question.

Thus, the second research question (2) focuses on a comparative analysis of the Norwegian, Swedish, Finnish and Danish crisis responses. The considerations and interests of each of the Nordic managements shall be examined in order to discover discrepancies that may explain the variation in crisis responses. As we shall see, evaluating risks requires interpretive judgment in the face of technical uncertainty and scientific disagreement. Thus, an important aspect of this second research question is to investigate the way in which scientific expertise is applied in government policy.

1.3 Research design, setting and methodology

The research methods employed in this study are primarily qualitative interviews and documentary studies of official directives and statements, supplemented with various accounts from media. All the interviews in the study, 9 in total, were conducted in Tokyo, May 2011. In the course of my stay there I was able to interview officials from the Norwegian, Swedish, Finnish and Danish embassies. I also spoke with a representative at the Swiss embassy, but given the basic restrictions on my study, this thesis does not discuss the Swiss Embassy's crisis response in particular. The interview with the Swiss representative has nevertheless proved useful as a background reference.

Insofar as possible I have interviewed one political and one scientific attaché at each embassy. Throughout the thesis I refer to these as "diplomats" and "science officers" respectively, unless specifically signified with formal title. In addition, I have interviewed two close affiliates of the Norwegian Embassy representing the two Norwegian agencies that happen to

hold offices within the Embassy grounds: *Innovation Norway* (IN) and the *Norwegian Seafood Export Council* (NSEC). Henceforth, they shall be referred to as "Embassy affiliates" collectively, or as the "IN representative" and the "NSEC representative" respectively. (The IN representative and the Norwegian science officer are in fact one and the same person; his position is both with IN and the Embassy.) As it turns out, sharing the Embassy compound poses certain conflicts of interest for the parties involved. Such information is of interest when studying factors that have influenced the Norwegian Embassy's course of action. Moreover, the two affiliates were an active part of the Embassy's crisis team and could provide important insight on internal processes within the Embassy. Below is an overview of the interviews that have been carried out in connection with the study.

Embassy	**Interviews**	**Designations**
Norway	3	1 diplomat + 1 science officer / IN rep. + 1 NSEC rep.
Sweden	2	1 diplomat + 1 science officer
Finland	2	1 diplomat + 1 science officer
Denmark	1	1 diplomat
Switzerland	1	1 diplomat

I was well received by all of the delegates that I spoke with, although as interview subjects I found some of them to be a bit reserved; the diplomats were too diplomatic, so to speak. In certain cases it was exceedingly difficult to get direct answers, here with explicit reference to the Norwegian Ambassador. Contrary to the others, the Norwegian Ambassador never wavered from his role as an official spokesman, always answering on behalf of the organization and in plural form, even when I specifically asked about his personal opinion. He also retracted his initial consent to let me question others among his staff, not even to discuss purely factual matters. As he explained, he had consulted with the Ministry on the issue and come to the conclusion that allowing such inquiries would be imprudent; it might touch upon sensitive information exempt from public disclosure. In my opinion it seems that the Ambassador suddenly became concerned about the repercussions of my study and did not want it to expose any opposing opinions among the Embassy staff. Still, I do not feel that this has thwarted my mission; the intent of my inquiries was not so much to expose personal considerations as to broaden my empirical basis and understanding of how the decision-making processes work within the Norwegian Embassy – the focus of this study is after all the Embassy's official management, not its subjects. On this account I received ample input

on relevant internal dealings from the two Embassy affiliates, and the Ambassador's restriction did not hinder me in speaking with the Embassy's science officer, largely due to the fact that the science officer's main employment is with Innovation Norway, as deputy to the Tokyo IN office – and he was more than willing to go along with my inquiries. In a sense, the Ambassador's dilemma was actually quite revealing; in pursuit of the underlying considerations that have affected the Norwegian Embassy's crisis management, clearly public reputation is a major concern.

When discussing a proper methodological approach, it is necessary to mention that my mother works for the Norwegian Foreign Ministry and is currently stationed at the Norwegian Embassy in Tokyo. Naturally, this influenced my choice of case as it involved the benefit of working on my thesis directly from the Embassy grounds, as well as a certain guarantee of access to the people and materials that I sought. I have not, however, formally interviewed my mother as a part of this study. This is partly because the Ambassador did not allow any interviews with the Embassy staff members, and partly because I wanted to study the embassies in a symmetrical manner, that is, as far as possible maintain a detached association to all accounts. My mother has, however, been helpful in such things as confirming dates and factual information.

The amount of explanatory power that can be extracted from a single case study is limited. Such studies are often seen to be interpretive explorations of social phenomena, but the findings are not necessarily transferable to other cases within the same field. This thesis, however, comprises multiple cases; each of the Nordic embassies – the Norwegian, Swedish, Finnish, and Danish – represents an individual entity of study, thereby expanding the validity of any analytic generalizations that may be drawn. Analytic conclusions arising from a multiple-case study are generally regarded as more compelling and more robust than those coming from a single case alone (Yin, 2009, p. 53). Yet even when limited to the level of a single case study, the contextual nature of the case can be overwhelming for an analyst unless equipped with a theoretical approach that provides room for processing such multifaceted impressions. Deciding on such a theoretical framework shall be the focus of the following chapter.

2. Theoretical framework

The multifaceted and contextual nature of the case study calls for a theoretical understanding of the topic that is equally compound in scope. Accordingly, this chapter shall emphasize the importance of an approach to studying risk that extends beyond a narrow technical understanding to include a focus on risk as a social concept. The chapter introduces the two main theoretical frameworks to be employed in the analysis of this study: Dorothy Nelkin's (et al.) discussions on the mutual influence between science and politics, and Mary Douglas' (et al.) culturalist approach to risk, more often known as Cultural Theory.

But first of all, the chapter begins with a review of the various approaches that have guided studies of risk assessment. Such an overview is important to understand the focus of this study. As pointed out by Judith Bradbury (1989, p. 380), unless all dimensions of a problem are taken into account, it is likely that attempts will be made to solve the wrong problem.

2.1. Approaches to risk

Traditionally, risk concepts have been developed within a framework where risk is technically defined. The technical concept of risk reflects a view of scientific knowledge as composed of objective facts. Technical risk assessments seek to calculate in an objective manner the probabilities of a hazardous event, to identify the consequences for human health, and to estimate the likelihood of these consequences. As a result, technical perspectives are often criticized for being overly quantitative and reductive. Moreover, they fail to account for the diversity of public perceptions of comparable risks. The persistence of risk disputes has led to other lines of inquiry within the field of psychometrics (Nelkin, 1989, pp. 99-100).

Psychometric studies of risk focus on factors that enter subjective risk perceptions and point to a concept of risk that is multidimensional and considerably more complex than the technical account. A key name in this direction is Paul Slovic. An important point in Slovic (1992) is that expert opinions on risk probabilities do not have much effect on laypeople's attitudes and perceptions. But as with the technical approach, Slovic and his associates base their studies on a factual concept of risk, implying that there is a standard of real risk against which lay perceptions may be judged to be more or less accurate. This is epitomized in the field's common use of the term *perceived* risk. The term connotes that natural sciences study

reality, while the factors discovered by the social sciences represent "mere perceptions" (Bradbury, 1989, p. 384).

This has attracted another line of inquiry among sociologists who claim that such a distinction between "real" and "perceived" risk is misleading; experts' and laypersons' assessments of risk both constitute judgments and both are subject to bias. Specifically, these social scientists represent a particular branch of sociological risk studies closely affiliated with the field of Science and Technology Studies (STS). Their starting point is that all risks – also those determined by scientists and risk experts – are a product of social processes (Lidskog & Sundqvist, 2012). Indeed, neither the technical nor the psychometric approach manages to account for variations in the perception of comparable risks in different social, cultural, or international contexts.

Not to say that technical or the psychometric views on risk are obsolete, but they represent just parts of society and culture at large. Herein lies the essential contribution of STS to sociological risk studies. According to Göran Sundqvist (2002, p. 29), what often is lacking in sociological studies, but which is at the forefront of STS, is an interest in the *knowledge* involved. Too often the knowledge of experts is not disputed. STS practitioners contend that the role of science and technical risk analysis is a relevant topic for sociological studies, although not something that should be used as final results by which to judge other people's knowledge claims. "Knowledge is not made up of simple reflections of self-evident states of the world; the world always has to be interpreted by humans using cultural resources as concepts, classifications and previous experience as horizons of expectation, which strongly influence the outcome of knowledge production. It is therefore possible to construct different knowledges about the 'same' object" (ibid. pp. 29-30). The important task for STS is, therefore, to explain how such variations in knowledge come about. In connection with risk studies, then, this means we should focus on variations in risk assessments – including risk perceptions – so as to identify the underlying value premises that shape individual interpretation of the particular phenomena of investigation. Such is indeed the guiding principle behind the composition of this study.

2.2 Science and politics

The relationship between science and policy has received much attention from STS researchers "because it serves in such an obvious way as a test field for studying the mutual

influence of science and policy" (Sundqvist, 2002, p. 30). According to the American sociologist and STS researcher Dorothy Nelkin (1979, p. 16), an important fact enabling social values to influence the judgments made by technical experts, is that scientific data are characterized by uncertainties. The persistent uncertainties compound the difficulties of risk assessment and leave considerable scope for subjective factors to enter both scientific interpretations and public perceptions: while debates among scientists reflect the biased selection of scientific evidence based on individual value premises, public debates over science and technology reflect the selective use of technical expertise as a means for defending the legitimacy of policy decisions. In this way, technical knowledge becomes a resource exploited by all parties to justify their particular political and moral views.

Scientific uncertainties prevail at several levels, making risk assessment a complicated field of practice. For often, while an accident could be catastrophic, the chances of one are small and difficult to calculate. In other cases, the extent of risk may remain unclear due to inadequate evidence or complicated correlations, such as when health effects do not become evident for many years or when different people are affected in different ways. Even when the risks are known, they must be weighed against the potential benefits; in such cases dispute focuses on balancing competing priorities in decisions about regulation. It is hardly surprising, then, that specialists assessing risk arrive at divergent conclusions about the level of danger and the need for regulatory controls (Nelkin, 1989, pp. 97-98).

According to Nelkin, when scientific data are used in regulation and various judicial processes, different parties try to exploit the uncertainties for their own purposes. Technical expertise becomes a crucial political resource in conflicts over science and technology, "for access to knowledge and the resulting ability to question the data used to legitimize decisions is an essential bias of power and influence". In this way, the technical expert "is reduced to one more weapon in a political arsenal" (Nelkin, 1979, pp. 15-16).

However, as asserted by Göran Sundqvist (2002, p. 34), Nelkin shows a normative tendency in her analysis when, for instance, claiming that "the technical nature of the debates often tends to obscure their underlying political dimensions" (Nelkin, 1979, p. 24). Sundqvist interprets Nelkin's position as one where it is important to sort out what is science and what is policy; but how will we be able to measure the degree of scientific relevance against the degree of political or social influence? Such a task "is both inconvenient and hard to manage,"

Sundqvist asserts, "as it ends up in a normative position of judging the legitimate power of different spheres" (Sundqvist, 2002, p. 35). In his opinion, the best way for academic researchers to handle such questions is "by adopting an analytically impartial and empirically based strategy, analyzing the attitudes of the scrutinized actors" (ibid. p. 32). Drawing on the work of Sheila Jasanoff, Sundqvist describes how a positivistic view of defining science as independent of social values works to uphold the authority of the scientist. Thus, rather than using clear-cut demarcations between facts and values, Sundqvist argues that the positivistic viewpoint more accurately may be analyzed as a *professional strategy*, adopted by scientists and affiliated agents so as to raise their own credibility (ibid. pp. 37-38).

In short: the evaluation of risk engages a variety of institutions, activities and actors that differ in their objectives and practices, and to properly label these activities and people, for example as regulatory science or as scientific expertise, is an important task. Professional self-interests (not only among scientists, but among all those involved in the risk evaluation process), in combination with other types of interests (political, economic, social), work to influence individual perception and assessment of risk, causing discord regarding the appropriate policy proceedings. Such an "interests explanation", as Sundqvist calls it, has been a popular analytic approach among several STS researchers, and it is also, as Sundqvist acknowledges, prominent in Nelkin's work, despite her tendency to favour the accusation of "obscure" technical knowledge (Sundqvist, 2002, p. 41). An interests approach to explaining the variations among the Nordic crisis responses is the main methodical outset of this study.

2.3 Cultural Theory

The anthropologist Mary Douglas is the main influence in what can be seen as the culturalist approach to risk. Douglas claims that concerns about risk may depend less on the nature of the actual danger than on political, economic, or cultural *biases* – that is, the pattern in which shared values are arranged. Not all dangers are recognized as risks; to become a risk, a danger must be culturally perceived and selected as such. Thus, the selection of dangers and the choice of social organization run hand in hand. It is the social incorporation (group) and the degree of societal regulation (grid) that shape the perceptions of risk (Douglas & Wildavsky, 1982).

It was in *Natural Symbols* (1970) that Douglas first introduced her now widely known group-grid model, which later gave rise to the broadly labeled research tradition Cultural Theory

(c.f. Thompson et al., 1990). The theory is wide-ranging and aims to provide a dynamic understanding of the relationship between individual risk perception, social organization, and political ideology. This thesis, however, shall not greatly concern itself with the overarching premises of civilization or ideology, but will focus on the particular diplomatic cultures of the respective embassies in relation to their local Japanese surroundings. Here I shall briefly review only those aspects of the theory that are applicable in my analysis.

The group-grid model is based on a two-dimensional typology, but the dimensions are far from simplistic: The (social) group dimension indicates the degree of social incorporation of any individual, measured by the amount of social interaction, the interconnectedness of networks, and the strength of group boundaries. The (regulation) grid dimension covers the amount and strength of rules and classifications that regulate individual options and social interaction. Put the two dimensions together, group and grid, and you get four contrasting types of social control that make up the grid-group cultural typology: Briefly put, high grid/high group produce positional hierarchies, high grid/low group produce isolates or fatalism, low grid/high group produce enclave communities and egalitarianism, and low grid/low group produce competitive individualists and markets. In this way, mechanisms of grid and group allow for several combinations, although still caught within the framework of the model (Douglas, 2006, pp. 2-6).

This presents the first rudimentary version of grid and group whereby analysis essentially is limited to a static mapping of cultures. It was Michael Thompson and Aaron Wildavsky (1990) that eventually transformed the model into a more dynamic theoretical system (Cultural Theory) by introducing interaction between cultures. They showed that any community consists of several cultures, and that each culture defines itself by contrast to the others, steadied and reinforced by supporting institutions (Douglas, 2006, pp. 8-10).

Cultural Theory is based on the idea that all cultures are inherently opposed to one another and represent incompatible forms of social organization. In order for existing cultures to endure, it is essential that each one believe the others are fundamentally immoral (Douglas, 2006, pp. 8-9). However, the idea of incessant competition and “irreconcilable conflict” between different cultural platforms becomes hard to justify when studying processes of exchange and assimilation in today’s multicultural societies. Such cases are more readily understood by using the group/grid dimensions as “independently variable yet mutually

interdependent factors" (Geertz 1973, quoted in Haukelid, 1999, p. 32).

Without much regard for some of the more rigid stipulations of Cultural Theory, then, its conceptual framework has proven a useful reference in this comparative study of risk perception. As stated by Thompson: "The cultural bias approach is essentially a comparative method for taking account of differences between nations in terms of their differing patterns of cultural divergence" (Thompson, 1986, p. 123). In this way, Cultural Theory allows for variation in risk perception, not only in terms of cultural differences (in the sense of national culture), but also on account that different people may bias a certain culture in different directions. "Its concern is not with those gross cultural differences *between* countries, but more with those differences that are to be found *within* them. (…) For as well as cultural convergence, there is cultural divergence." (ibid. p. 123). Thus, the stage is set for a thorough investigation of the different risk managements among such (seemingly) culturally akin communities as the Nordic embassies in Tokyo. Moreover, the embassies representing foreign authorities in a local Japanese context, adds to the case an interesting angle of intercultural association.

2.4 Theory as applied to the case

Before we move on to the main body of this case study, I shall go over certain aspects peculiar to the case in order to substantiate the particular selection of theoretical frameworks. I feel this can be done most effectively by thoroughly defining (1) the specific *type* of risk being studied, (2) the *context* in which it is perceived, and (3) the *method* by which the specific type of risk in its specific context most suitably may be analyzed:

(1) The type of risk being studied in this thesis is nuclear risk, or more specifically, the risks of low-dose radiation. Characteristic of this type of risk is the considerable uncertainty that prevails over the health effects of exposure. In *Risk Society* (1992) Ulrich Beck describes the risks of modern civilization. Modern risks are man-made, universal, future-oriented, and knowledge dependent; they require the "sensory organs" of science in order to become visible or interpretable as hazards at all (Beck, 1992, p. 27). Indeed, Beck's description is highly applicable to the topic of nuclear risk. Since we cannot see, smell or in any way sense low-dose radiation, our knowledge of its possible dangerous effects is based not on experience, but on mediated knowledge occurring through scientific expertise. This leaves plenty of opportunity for various interpretations to manifest over the risks of radiation exposure.

(2) The context in which this nuclear risk is discussed is in connection with a large-scale and unforeseen nuclear accident. In sociological studies nuclear risk has typically been discussed in relation to public controversies over the siting of a nuclear waste disposal or regarding the regulation of appropriate exposure levels for the workers at a nuclear plant, etc. This study, however, deals with nuclear risk and nuclear regulation *after* the hazard is a fact. Thus, the issue is not so much about traditional risk regulation as it is about crisis management. This particular situation offers an interesting angle, because what is often the case in controversies over technology or regulation is that the authorities push for technological advancement while the public resists and is more skeptical to the dangers. But in the case of the Nordic responses to the Fukushima nuclear crisis, circumstances have been quite the opposite. It seems that the Nordic governments have advised higher precaution than what many of their citizens living in Japan felt was necessary. In this way, the Nordic embassies' local presence within Japanese society provides important insight to the different understandings and assessments of the situation.

3) Based on the above two provisions, my methodical outset shall be to use Nelkin's interest approach to explain differences in risk assessment, and Douglas' cultural analysis to explain differences in risk assessment within the *same* interest group. Given the basic objective of this study to uncover the underlying interests that have shaped the Nordic crisis responses, Nelkin's interest approach is easily justified. Yet at the same time, the particular context in which the risk is evaluated necessitates an approach that not only accounts for different roles and interests, but also accounts for different situational settings and cultural frameworks; not only are we investigating the political interests at play at the governmental level, we are also (if not mainly) studying the particular embassy perspective of representing a foreign government's interests from within a Japanese society in crisis. Having reached the point where we understand *how* risks are handled differently by different institutions and individuals, we need to turn to Douglas' cultural analysis to tell us *why*; for even coinciding roles and interests (as with the embassy and its ministry) may produce differing risk evaluations. As Thompson argues: "Even a cursory international comparison will reveal that the same risks get handled differently in different countries, that there are different *institutionalized styles of risk-handling*. But institutions are not just there; they have to be legitimated. (…) An adequate theory of risk-handling style (…) will have to go below the institutional level and take account of socially induced variations in individual perceptions of

risk and in individual strategies toward risk" (Thompson, 1986, p. 122). Thus, it is my contention that Nelkin's interest explanation and Douglas' cultural analysis work well in combination. Or in other words, by combining STS methodology with sociological theories of risk, an empirically sensitive and enhanced understanding of different risk perceptions can be achieved.

3. The Norwegian response

This chapter addresses the first research question: In connection with the Fukushima nuclear crisis, how has the Norwegian Embassy responded to the situation, and what considerations and interests have influenced this crisis response? The official course of action and the various dealings of the Norwegian Embassy shall be mapped out, and along the way, considerations and interests that have factored into the Norwegian crisis management shall be identified. However, the findings shall not immediately be fully interpreted within an analytical framework. The bulk of analysis shall be reserved for the overall comparison of the Nordic responses (Chapter 5 and 6).

3.1 Response organization

The emergency preparedness system in Norway is regulated according to the so-called *sector responsibility principle* whereby each designated organization is in charge of emergency planning and dealing with emergencies in the domain for which they are ordinarily responsible. The ministry that is most affected is appointed executive ministry and will supervise the crisis response, assisted by other affected governmental offices (Ministry of Justice and the Police, Norway, 2001). Consequently, as the *Norwegian Ministry of Foreign Affairs* (MFA) commonly is responsible for assisting citizens in crisis situations abroad, it became executive coordinator of the Norwegian emergency response to the Great East Japan Crisis.

The Norwegian Embassy in Tokyo is part of the MFA organization and follows Ministry jurisdiction. While the MFA administers the general crisis management from Oslo, the Embassy deals with the situation at the local level. According to the general contingency plans, in the event of natural disaster the Embassy's main tasks include providing an overview of affected Norwegians, assisting Norwegians in the need of help, informing on the situation and appropriate security precautions, and coordinating assistance from Norwegian authorities and organizations. If need be, the MFA shall sufficiently supply the Embassy with additional personnel and technical equipment so that the disaster may be handled in an efficient manner (Fjell, 2007, pp. 80-81).

In addition, special expertise is made available when dealing with nuclear incidents. The Royal Decree of 17 February 2006 establishes a separate nuclear accident preparedness organization in order to ensure the rapid implementation of protective measures. The organization is built up around the *Crisis Committee for Nuclear Preparedness*, made up of representatives from several governmental offices such as the Norwegian Radiation Protection Authority, the Ministry of Defense, the Norwegian Directorate of Health, the Norwegian Food Safety Authority, the National Police Directorate, and the Directorate for Civil Protection and Emergency Planning. The *Norwegian Radiation Protection Authority* (NRPA) is head of the Crisis Committee and is required to provide the Committee with scientific expertise, obtaining information, situation assessment, measurement results, etc. The NRPA maintains round-the-clock alertness and is the contact point for the national and international warning agreements (Norwegian Radiation Protection Authority, 2010).

And so it was that the Norwegian emergency response to the crisis in Japan was mobilized in keeping with protocol. The same day as the crisis struck (March 11) the MFA established its emergency staff, as did the Crisis Committee the following day. The two teams collaborated closely, and on the morning of March 14, they decided to send an emergency unit from Oslo to Tokyo in order to evaluate the situation on-site and reinforce the efforts of the Norwegian Embassy (which in the meantime had been hard at work in establishing its own emergency management) (Ministry of Foreign Affairs, Norway, 2011). The emergency unit was made up of 3 MFA officials, 2 from the NRPA, 3 from the Police Directorate, and 2 from the Directorate of Health (Norwegian Radiation Protection Authority, 2011). The unit departed Norway on March 15, later reducing its presence in Japan as of March 21 (Norwegian Radiation Protection Authority, 2011). In addition, shortly after the earthquake and tsunami disaster was a fact, the Embassy received provisional reinforcements from the Norwegian diplomatic missions in Shanghai and Beijing, arriving within days of the initial outbreak to alleviate the workload on the Embassy staff (Dagbladet, 2011).

3.2 Actions and recommendations

As we recall from the introductory chapter, the topics of investigation in this study of the Norwegian crisis response can be sorted into two main categories: official security directives to Norwegian citizens (i.e. travel advice, recommendations concerning potassium iodide tablets, and the arrangement of special flights back to Norway), and the Norwegian Embassy's own security precautions (i.e. the relocation of Embassy operations and the

management of Embassy personnel). The next two subsections deal with these two categories respectively.

3.2.1 Official security directives to citizens

Official travel advice is typically issued whenever the MFA wishes to recommend that Norwegian citizens avoid or consider the risk of travelling to a particular area or region due to dangerous or unstable circumstances. Such official advice may recommend that citizens avoid "all travel" or "non-essential travel" to a country or region and, in some cases, that they leave that country or region. It may also include information regarding personal safety measures. As a rule, it is the MFA that issues the travel advice, revising it according to continual assessment of the situation's progression. Although the Ministry can encourage people to follow its recommendations, ultimately the decision to travel is the sole responsibility of the individual (Ministry of Foreign Affairs, Norway, 2009). Nevertheless, travelling to a country against the Ministry's advice may still have certain economic and legal implications regarding insurance coverage. In this way, in addition to personal predicament, the official travel advice may also greatly influence company dealings and business at large in the affected area.

As mentioned, the official travel advice is formulated by the MFA, but there are typically several parties involved in the process. With regard to the crisis in Japan, the MFA has relied heavily on counsel from the Crisis Committee and in particular the scientific expertise provided by the NRPA. The Embassy in Tokyo is also involved, keeping the MFA at home informed on the movements of other embassies and Japanese authorities. However, the Ambassador emphasizes that the Embassy only plays a secondary part in the actual conception of the recommendations; although the Embassy is largely involved in the deliberation process, the final decision is made by the Ministry.

Table 1 on page 25 shows a complete overview of the Norwegian travel advice for Japan since March 11. The information has been compiled from the MFA's website along the way as the updates have been issued, and the original wording of the advice has been kept as far as possible. In total there have been eight postings, most of which were issued within the first month after the outbreak, when details and prospects on the nuclear situation still were very unclear. The initial recommendation of March 12 however, was not so much rooted in the nuclear threat as it was on the general damage to infrastructure resulting from the earthquake and tsunami, and Norwegians were advised against non-essential travel to the hardest hit areas

in the Tohoku region. The subsequent updates were largely based on the situation at the Fukushima power plants and on the risk of radiation exposure. On March 15 the initial precaution was drastically escalated as the Ministry discouraged all travel to Japan as well as residence therein. The next update on March 17 expanded on the previous posting, adding that Norwegians within 80 km of the Fukushima power plant should leave and specifically advising those in the northeastern parts of Japan, including Tokyo, to consider leaving. As stated in the notification, this update was issued in accordance with the travel recommendations of the other Nordic countries. On March 20 the Ministry repeated the previous posting, but left out the part discouraging travel to Japan overall, only to add it once again on April 1, although this time specifying that it only applied to non-essential travel. On April 13 however, the overall restriction on travel to Japan was removed once and for all, and in addition to the existing 80 km zone, a 150 km zone was introduced: non-essential travel to the area between 80 and 150 km from the Fukushima power plant, as well as residence therein, was discouraged. The latest update on June 16, still valid as of October 2011, upholds the 80 km zone around the power plant (without the 150 km zone): all travel to the zone is discouraged and citizens within are encouraged to leave.

Table 1: Overview of Norwegian travel advice for Japan as of March 11 2011

	Basic recommendation	Additional information
12/03	The MFA advises against all travel that is not strictly necessary, to the Japanese areas hardest hit by the March 11 earthquake and tsunami in the Tohoku region.	Travellers to Japan should be aware of the possibility of delays and changes in public transportations and should act in accordance with current recommendations from local Japanese authorities.
13/03	The MFA advises against all travel that is not strictly necessary, to the Japanese areas hardest hit by the March 11 earthquake and tsunami in the Miyagi, Iwate, Aomori, Akita, Yamagata, Tochigi, Ibaraki and Fukushima prefectures northeast of Tokyo.	Travellers to Japan should be aware of the possibility of delays and changes in public transportations and should act in accordance with current recommendations from local Japanese authorities.
15/03	The MFA advises against travel to or residence in Japan.	The advice is in connection with the unresolved situation at the nuclear power plants. Norwegian citizens are encouraged to follow recommendations from local authorities and see updated information on the website of the Embassy in Tokyo.
17/03	The MFA advises against travel to or residence in Japan. Norwegians staying less than 80 km from the Fukushima power plant are encouraged to leave the area. Norwegians staying in the Tohoku, Chubu, and Kanto regions should consider leaving the area. This includes Norwegians in Tokyo, which is a part of the Kanto region.	The advice is connected to the unresolved situation at the nuclear power plants and the possibility of further deterioration. The recommendation is in accordance with the advice of other Nordic countries and is made upon counsel with the NRPA. Norwegian citizens are encouraged to follow recommendations from local authorities and see updated information on the website of the Embassy in Tokyo.
18/03	The MFA sets up special flights from Japan to Norway departing 19/03.	The flights are not part of an evacuation, just an offer to citizens who want to leave.
20/03	Norwegians staying less than 80 km from the Fukushima power plant are encouraged to leave the area. Norwegians staying in the Tohoku, Chubu, and Kanto regions should consider leaving the area. This includes Norwegians in Tokyo, which is a part of the Kanto region.	The advice is connected to the unresolved situation at the nuclear power plants and the possibility of further deterioration. Norwegian citizens are encouraged to follow recommendations from Japanese authorities and see updated information on the Embassy's website.
20/03	Potassium iodide tablets are made available to Norwegians in Japan.	The tablets are only to be taken upon instruction from Japanese or Norwegian authorities.
01/04	The MFA advises against travel to or residence in Japan that is not strictly necessary. Norwegians staying less than 80 km from the Fukushima power plant are encouraged to leave the area, while Norwegians staying in the Tohoku, Chubu, and Kanto regions (including Tokyo) should consider leaving the area.	The advice is connected to the uncertainty of the development at the nuclear power plant. Norwegian citizens are encouraged to follow recommendations from Japanese authorities and see updated information on the Embassy's website.
13/04	The MFA advises against travel to or residence in the area between 80 and 150 km from the nuclear power plants in the Fukushima area, that is not strictly necessary. Norwegians staying less than 80 km from the nuclear power plants in the Fukushima area are encouraged to leave the area.	Norwegian citizens are encouraged to follow recommendations from Japanese authorities and see updated information on the Embassy's website.
16/06	The MFA advises against all travel to or residence in the area within 80 km from the nuclear power plant Fukushima Dai-ichi, and encourages all Norwegian citizens to leave the area.	Norwegian citizens are encouraged to follow recommendations from Japanese authorities and see updated information on the Embassy's website.
16/06	Potassium iodide tablets are no longer deemed necessary and will not be distributed anymore.	

Also included in the Table 1 overview, although not strictly counted as official travel advice, are other types of Ministry recommendations relating to the security situation in Japan. These concern the transportation of citizens back to Norway on specially arranged flights and the distribution of potassium iodide as a preventative measure against radiation poisoning. In Table 1 these directives are indicated in the shaded areas.

Regarding the special flight arrangements: On March 18, following the March 17 travel advice heightening the alert on Tokyo, the Ministry announced that it would arrange two special flights as a service to bring home those Norwegians that wanted to leave. The flights would depart from Japan (Tokyo and Osaka) on March 19. The Ministry was mindful to point out that it was not planning an "evacuation" of Norwegian citizens, but rather contributing towards helping them leave if they so chose. The special flight arrangements were being offered because commercial flights out of Japan reportedly were filling up, making it increasingly difficult to leave the country (Ministry of Foreign Affairs, Norway, 2011).

On the subject of potassium iodide: Accompanying the updated travel advice on March 20, the Ministry announced that the Crisis Committee had decided to make potassium iodide tablets available to Norwegian citizens living in Japan. Potassium iodide is a common precaution implemented in the event of a radioactive release, as it may prevent the development of thyroid cancer caused by radioactive iodine, which is one of the most common nuclear fission products. The body absorbs iodine rather quickly and stores it in the thyroid gland, but by saturating the body with a source of stable iodine (iodide tablets) prior to exposure or shortly thereafter, the uptake of radioactive iodine can be blocked. According to the NRPA, side effects of taking iodide tablets are rare, usually mild and short-lived, and may involve symptoms such as a metallic taste in the mouth, nausea or abdominal pain (Norwegian Radiation Protection Authority, 2011).

In the notification of March 20, the Ministry stated that the iodide tablets could be obtained by contacting the Norwegian Embassy, adding that Norwegians travelling to Japan (despite official recommendations not to) should bring along potassium iodide obtained from the Norwegian Directorate of Health in advance. The Ministry did not, however, recommend immediate intake, stressing that the iodide tablets only should be taken upon specific instruction from Japanese or Norwegian authorities in the event that the nuclear situation should worsen (Ministry of Foreign Affairs, Norway, 2011). As it turned out, such

instructions never ensued, and as of June 16 the NRPA announced that potassium iodide would not be distributed anymore, as it no longer was deemed necessary.

3.2.2 The Embassy's own security measures

As for the Norwegian Embassy in Tokyo, it too was affected by the travel advice that was issued. In dealing with the crisis, the Embassy had to ensure the safety and wellbeing of its staff and implemented certain security measures along the way.

In the early stage of the crisis, the Norwegian delegates were given the opportunity to go back to Norway with their families on special leave. This arrangement, however, did not have any basis in the Ministry's travel advice or the security situation in Japan. Rather, it was established as a part of the MFA's employer liability to its staff, purely in the event that they should feel overworked or in any way troubled by the situation. Of the seven permanent delegates to the Embassy, five chose to take leave at one point or another. Two remained with the Embassy, one of which was the Ambassador.

In addition, consistent with the travel advice of March 17 recommending that Norwegians in Tokyo should consider leaving the region, the Embassy staff in Tokyo was temporarily moved to Kobe. The Ministry announced that the decision was made in accordance with the updated travel advice, and also with consideration to the MFA's employer liability to its personnel. The move was a security precaution, based on the uncertain situation with regard to the nuclear emissions from the power plants in Northern Japan; a change in wind direction could bring emissions to Tokyo. Kobe, located 430 kilometres southwest of Tokyo, is therefore farther away from the power plants in Northern Japan. The Ministry added that the Embassy would "continue to be available for inquiries from the public, but a somewhat reduced level of service must be expected" (Ministry of Foreign Affairs, Norway, 2011).

In this connection, the particular phrasing of the "temporary movement of personnel from the Embassy in Tokyo to Kobe" is worthy of note. The Ministry does not refer to the move as a relocation of the Embassy, or even a relocation of operations. And exactly what a "reduced level of service" entails is not made clear in the notification. For all intents and purposes, seeing as the reception desk was empty and the front gates locked, Embassy operations in Tokyo might as well have shut down. Yet the Ambassador denies that the Embassy in Tokyo ever closed: "It was not the Embassy that moved; it stayed here, but there were Embassy

employees that temporarily moved to Kobe to run Embassy operations from there. So we did not move the establishment, because we still have target groups here (in Tokyo), and while we were in Kobe, I was for example in Tokyo several times to attend meetings, etc." It may seem as though the Ambassador is reluctant to convey that the Embassy ever abandoned its audience in Tokyo – Tokyo is after all where the majority of Norwegians in Japan live. As one of the Embassy affiliates pointed out when I mistakenly referred to the movement of personnel as a relocation of the Embassy: "There is a huge difference between the two phrasings because it involves that he (the Ambassador) doesn't end up with his embassy on Gaimusho's (the Japanese Foreign Ministry's) list of embassies that have moved out." Arguably, the social stigma of being listed among other "fly-jin" embassies was something the Ambassador wished to avoid. Yet again, then, public reputation appears to be an important concern in the Embassy's strategy.

While the Norwegian delegates were required to participate in the move to Kobe, the locally employed Japanese personnel were given the option to remain in Tokyo and work from home if they so wished, commuting to Kobe only for shorter shifts of a few days. As it turned out, none of the Japanese employees chose to join the Norwegian delegates in Kobe on a fulltime basis. The Embassy staff left Tokyo on March 22 and set up provisional operations at their Honorary Consulate General in Kobe, holding office space within the premises of the Norwegian classification company Det Norske Veritas (Ministry of Foreign Affairs, Norway, 2011). Here it was that the Embassy leased workspace for approximately four weeks, up until April 15. The move back to Tokyo was reportedly due to the subtraction of the travel restrictions on the capital as of April 13 (The Norwegian Embassy, Tokyo, 2011).

3.3 Closer on the Embassy

So far we have covered the basic security directives and actions that have been implemented by the Norwegian government in response to the nuclear crisis. We have also identified the various parties that are involved in establishing these safety measures. In the process, however, we have touched upon some instances that reveal a certain discrepancy between the Embassy's official stance and its actual dealings. The next three subsections shall take a closer look at the individual attitudes and conflicting interests within the Embassy's setup.

3.3.1 The Embassy opinion

In view of the fact that the Embassy is the Ministry's official representative abroad and also responsible for conveying the official recommendations to Norwegian residents of Japan, it is reasonable that the Embassy attempt to follow the official recommendations in their own security precautions, as was demonstrated in the relocation of personnel to Kobe. Yet the official travel advice does specify "non essential" travel/residence. As the Ambassador explains, it is up to the individual to decide what constitutes as "essential" and "non-essential" travel, and he provides a hypothetical example: "A journalist covering a revolution for example, he would also follow the travel advice, but it would be essential travel for him to perform his job." On this account, one could easily argue that the Embassy had a duty to remain in Tokyo *especially* considering the crisis at hand; it is exactly such an emergency situation that requires the Embassy to be fully operational and available to its citizens, who for the most part reside in Tokyo. Along these lines, in the process of determining what considerations that have shaped the Embassy's response to the crisis, it would be interesting to know exactly who initiated the relocation to Kobe: was it the Ministry or the Embassy? Officially it is the Ministry's decision, but surely the Embassy had certain views on the issue considering the fact that it directly affected Embassy operations and would involve a considerable upheaval of the organization. Earlier in the document we already established that the Embassy does take part in the deliberation process concerning updates to the travel recommendations, but we do not know if there have been any diverging opinions along the way.

When interviewing the Ambassador, he upholds that the Embassy fully supports the Ministry's judgments, furthermore maintaining an official and collective stance even when asked of his personal opinion: "We are an instrument of the government, its extended arm abroad. We agree with the travel advice that has been issued." Clearly the Ambassador does not wish to reveal any discrepancies between official and personal points of view. However, of the other two Embassy associates that were inquired, namely the IN and the NSEC representative (with whom we shall be further acquainted in the next section), more personal accounts are imparted: Both of them feel that the move to Kobe was unnecessary and that the official travel advice was too restrictive in certain respects, especially with reference to the recommendation against staying in Tokyo and travelling to Japan overall. One of them points out, however, that there almost always is some discrepancy between official and personal precaution because they are based on completely different principles; the consequences of

individual actions only affect the individual, whereas the authorities have to account for the population in general.

3.3.2 The Embassy compound

Regardless of the opinion within the Embassy itself, there is no question that the Embassy falls under MFA jurisdiction and must follow Ministry protocol. Yet the matter is not so clear when it comes to the other two Norwegian agencies that reside within the Embassy estate.

As mentioned in the introduction, the Embassy compound houses two other Norwegian State organizations: *Innovation Norway* and the *Norwegian Seafood Export Council*. Innovation Norway (IN) is the Norwegian government's official trade representative abroad. Generally speaking, the aim of the company is to assist Norwegian businesses in expanding into new markets, domestic as well as international (Innovation Norway, 2010). The Norwegian Seafood Export Council (NSEC) on the other hand, is the Norwegian seafood industry's combined marketing and information council. The goal of its operations is to increase the interest for and awareness of Norwegian seafood in Norway and the rest of the world (Norwegian Seafood Export Council, 2011). It is not uncommon for either corporation to have their abroad offices in close affiliation with the Norwegian embassies and consulates, as is the case in Tokyo. Nevertheless, both organizations are independent agencies with mandates of their own. Still, in the event of an emergency, they are a part of the Embassy's emergency setup and included in the Embassy contingency plans; a "hybrid" part of the Embassy, so to speak. This puts the offices in a somewhat tricky position when determining their own crisis responses.

Regarding IN's response: When the crisis hit, the IN office in Tokyo received instructions from its headquarters in Norway to shut down operations and to follow the actions of the Embassy. Thus, a statement was issued on March 15 informing that the IN office in Tokyo would close down until further notice in accordance with the MFA's advice not to travel to or reside in Japan (Innovation Norway, 2011). On March 23, another statement was issued: the IN office had been reopened, but would temporarily function from Kobe in collaboration with the Embassy (Innovation Norway, 2011). As was the case with the Embassy, the local IN employees were given the choice of going to Kobe or working from their Tokyo homes, all four of them choosing to work from home. The two Norwegian IN delegates were more

obligated to participate in the move, but stayed in Kobe only for shorter shifts, choosing to commute from Tokyo.

According to the IN representative, in the weeks following the crisis outbreak he worked fulltime as a part of the Embassy's crisis team. This did not pose a problem for IN operations, he explains, "partly because we feel it is our responsibility as partners in Team Norway, but also because it was natural seeing that IN's activities basically were shut down during the first two weeks; we could not engage in business in such a situation".

The NSEC on the other hand, never formally shut down its operations in Tokyo, but tried to "maintain operations as best we could, without being office dependent", as the NSEC representative explains. The Tokyo office consists of just one Norwegian delegate, in addition to one locally employed secretary. After the crisis hit, NSEC headquarters in Norway strongly encouraged both of them to relocate to safer areas. Whereas the local secretary chose to remain in Tokyo due to personal circumstances, the Norwegian office manager accepted the offer from headquarters for the sake of his wife and children and relocated with them to the NSEC's Singapore office, staying there for approximately one and a half week's time before returning to Tokyo.

According to the NSEC representative, the decisions were made with no particular consideration of the Ministry's travel recommendations and he never received any instructions from NSEC headquarters to follow Embassy conduct. Still, he admits that the NSEC office was greatly affected by the Embassy's actions, especially with regard to the Kobe move: "The Embassy didn't want any activity going on here, as that would have sent a bad signal. So the Embassy estate was practically out of bounds for any activity." In addition, he felt a certain obligation to be a part of the move to Kobe, and for that reason he made a few trips back and forth. This, he felt, was his duty as part of the "Embassy family". "We are a part of the family here, granted by the Ministry, and we take advantage of that for what it's worth", he explains as he reveals his double sided business card with the NSEC's logo on one side and the Embassy's on the other; "so in this sense there are certain responsibilities involved."

As demonstrated in the above, being a part of the "family" may blur the boundaries of duty and obligation. To a large extent the predicament can be explained by the fact that the

organizations have very different objectives: whereas the Embassy's task is to look after the wellbeing of Norwegian citizens in Japan, the primary mission of both IN and the NSEC is essentially to look out for Norwegian corporate interests. The IN representative explains that "as representatives of business, we have our own views on such things as travel advice and the temporary relocation of the Embassy; views that may contradict those that only take into consideration the general security of Norwegians in Japan". He claims that IN, together with the Chamber of Commerce, put quite a lot of pressure on the Ministry to change the travel advice and to move the Embassy back to Tokyo. The NSEC representative however, did not influence the travel advice much, although he believes he did have the opportunity.

3.3.3 The Embassy science officer

As mentioned in the introduction, in addition to his position as Counsellor to Innovation Norway, the IN representative also holds the title of Counsellor for Science and Technology to the Norwegian Embassy in Tokyo. Thus his role is twofold in the sense that he abides by both IN and the Embassy. This thesis refers to him using the two labels "IN representative" and "Embassy science officer" interchangeably according to context.

The Embassy science officer has a doctorate degree (PhD) in chemical engineering in addition to five years of working experience within nuclear technology, one of which was spent at a Japanese nuclear power plant. This special knowledge within the nuclear sciences made him a valuable asset to the Embassy in dealing with the crisis, and in the weeks after the crisis outbreak his function was predominantly tied to Embassy affairs, assessing the nuclear situation from a scientific point of view and explaining the specifics to people with non-technical backgrounds. Yet his position did not hold any formal authority over the travel recommendations. As the Ambassador maintains: "When it comes to decisions in terms of what we do, how we judge the situation, we must rely on the appointed expertise at home, which is the NRPA."

Be that as it may, the Embassy science officer worked in close cooperation with the two NRPA representatives sent from Oslo, and he also introduced them to his Nordic counterparts: the science officers from the Swedish and Finnish embassies, who like him hold special expertise within the nuclear sciences, and representatives from the Danish and Icelandic embassies. Based on his discussions with the other experts, he feels that "for the most part they feel the same way as I do; the limits that are set are extremely conservative –

not for the workers who are exposed to the radiation at the Fukushima facility, but for the population in general." Specifically, he feels the recommendation to avoid all travel to Japan and to leave Tokyo was too restrictive. The 80-km zone around the Fukushima nuclear facilities on the other hand, he feels were reasonable.

Seeing as there apparently was general consensus among the experts while in Japan, how come the NRPA in Oslo issued contrary recommendations? The Embassy science officer feels this has to do with the fact that there still exists considerable uncertainty around the actual dangers of radiation exposure. The NRPA can only ascertain that there exists *some* risk of yet another radioactive release, *some* chance that it might move in the direction of Tokyo, and *some* chance that it might have an effect on people's health; but they cannot be very quantitative in their predictions, as there hardly exist any reliable studies on the subject. Thus, the MFA is given leeway to interpret the NRPA's scientific assessment in a manner that best suits its own purpose; it is up to the MFA the determine the "appropriate" level of precaution in the face of uncertainty. In this connection the science counsellor points to the 2004 South Asian tsunami disaster as a contributing factor behind the MFA's "overly cautious" response; the disaster affected numerous Norwegian tourists in the region and the MFA's management of the incident was widely criticized, so this time around the Ministry has been extra keen on avoiding any criticism and has opted for a "better-safe-than-sorry" approach to the Fukushima situation.

4. The Japanese response

Although the focus of this study is on the Nordic crisis responses, a brief review of the Japanese crisis response is necessary seeing as it was a central point of reference for the Nordic authorities in determining their strategy. Moreover, a certain appreciation of the Japanese environment in which the embassies operated shall prove useful in the approaching analysis (Chapter 6).

"The Japanese community has been very disciplined and taken this with a composure I think you will not find anywhere else in the world", the Norwegian Ambassador remarked. Indeed, the international media has marvelled at the notable lack of disorder immediately following the earthquake, with hardly any reports of rioting or large-scale disruptions. This has largely been attributed to culturally inherent qualities within the Japanese people: their "extraordinary stoicism" and "rigid conformity, obedience and sense of national purpose" (The Australian, 2011). Yet, as this chapter sets out to demonstrate, we should be cautious in treating culture too autonomously. A main aim of this chapter is to discriminate between the Japanese crisis response and that of the Nordic governments, not on the basis of cultural generalizations, but on the basis of social and contextual factors *within* a cultural setting – thereby necessitating a more dynamic approach to explaining different understandings of risk.

4.1 Japanese culture and context

Overall, the Japanese security directives have been markedly less restrictive in comparison with the foreign directives. This is perhaps most evident in the evacuation zones around the Fukushima I power plant, where the Japanese authorities mainly have operated with a 20-km zone, later expanding its radius to 30 km. The 20-km mandatory evacuation zone was first set on March 12, then on March 15, residents within 20 and 30 km from the site were urged to stay indoors (Nuclear and Industrial Safety Agency, Japan, 2011), and on March 25, residents in the 30-km circle were urged to evacuate as well (The Japan Times, 2011). Furthermore, on April 22, the Japanese government began evacuating people from certain areas outside the official exclusion zone (The Japan Times, 2011).

Contrary to most foreign authorities, the Japanese government has not gone out with any "worst-case scenarios", the Norwegian science officer explains. It rather seems the Japanese

government has chosen a strategy that involves communicating the current facts, but without including too much interpretation concerning the possible outcomes. Even so, the Norwegian science officer does not doubt that the data provided by the Japanese government is accurate. He also believes that the extent of the Japanese evacuation and safety zones is sufficient in protecting the population of the affected areas, at least according to the existing radiation levels. The Norwegian Ambassador too acknowledges that the Japanese government has provided information "in a very thorough and professional manner", pointing out that so far the Japanese measurements have proven entirely consistent with those of the IAEA. The issue that sets the Japanese directives apart from the Norwegian directives, then, is not the basis of factual evidence, but the degree of safeguard in the event that the nuclear situation should worsen.

In the NSEC representative's opinion, Japanese people generally have a more "rational" approach to personal risk in comparison to Norwegians. This, he claims, is because most Norwegians in Japan have not gotten used to "the adjustment of mindset that you need to survive here". Living in one of the most seismically active countries in the world, it is not surprising that Japanese people are accustomed to earthquakes and react differently from people who experience an earthquake for the very first time. This might well be the case as far as earthquakes and tsunamis go, but even in Japan – notwithstanding the nuclear bombings of Hiroshima and Nagasaki – major nuclear accidents are not exactly everyday occurrences. Yet even in this respect – regarding the nuclear threat, that is – the Japanese crisis response has displayed substantially less precaution than its foreign counterparts. Herein we may be lead to believe that Japanese people, in some way or another, are more willing to accept or withstand nuclear risk. Yet, is such a general supposition viable?

Incidentally, Douglas specifically discusses the Japanese way of understanding risk, pointing out that there is no word for "risk" in the Japanese language. Douglas claims that the word "risk" as used in the English language has become a decorative flourish on the word "danger". Without using the word "risk" the Japanese can discourse very precisely about "formal probability, technical limits of certainty, degrees of safety, and of course, about the most primitive idea of all, danger" (Douglas, 1994, pp. 39-40). Instead of abstracting a particular risk issue from its larger context, the Japanese formulate it so as to include its moral and political implications. On this account, Douglas believes Japan may provide promising grounds for studying risk-taking and risk-aversion in a cultural framework: "This must be a

uniquely privileged occasion for questioning European habits of thought in an international perspective" (ibid. p. 50).

To this claim I would undoubtedly agree, however, Douglas becomes normative when suggesting that Japanese scholars hold the potential to "resolve various contradictions and anomalies in the risk debates in Europe" (ibid. p. 50). In this it is implied that Japanese understandings of risk may be used as a standard against which the accuracy of European risk assessments may be judged. "Is it possible that the Japanese have a cultural advantage in probabilistic thinking?" Douglas asks (ibid. p. 51). The reason for this, she postulates, would have to do with features intrinsic to Japanese culture; the systemic way of learning mathematics using an abacus, the reductive form of literacy based on ideogrammatic characters, and the ancient form of hierarchal society. Based on these three idiosyncrasies, Douglas makes the all-embracing assumption that probabilistic reasoning (understood as "rational" reasoning) would come more easily to Japanese people than to Europeans (ibid. pp. 52-53).

Yet, to the best of my knowledge, Japanese people are not exempt from phobias such as fear of flying – despite the fact that "probabilistic" reasoning deems it safe. Notwithstanding the decidedly positivistic inference, Douglas' assumption displays a gross generalization of Japanese risk interpretation void of any context or social interaction. Ironically, Douglas falls foul of her own notions by abstracting the concept of risk from its value-embedded environment. That is to say, while she takes into account Japanese culture at large, she crucially neglects the specific situational and circumstantial context embedded in all conceptions of reality.

Accordingly, the way the Japanese authorities have handled the nuclear crisis, and the fact that the Japanese management demonstrated lower precaution than foreign managements, is inherently tied to the specific situational and circumstantial context. First, we must bear in mind that the Japanese government is in an exceptionally compromising position. The Japanese government is inevitably being held responsible for the nuclear dimensions of the crisis and must instigate counteractive measures while at the same time having to justify its nuclear policies. Moreover, the Japanese government is under several practical constraints relating to capacity, funding, panic prevention, etc. More importantly perhaps, under no circumstances can the Japanese government suggest that the entirety of its populace flee the

country. In fact, in an interview with former Japanese Prime Minister Naoto Kan (he resigned in August after widespread criticism of his crisis management), he disclosed that in a worst-case scenario 30 million residents in the Tokyo metropolitan area would have had to be evacuated to other parts of the country, but that in reality, such a large-scale evacuation would have been practicably impossible (The Japan Times, 2011). In contrast, foreign governments are in a position where they *can* ask their citizens to leave Japan without it imposing major financial or logistical challenges. As stated by the Norwegian science officer: "With the Norwegian Embassy being responsible for only a limited number of individuals, it is relatively unproblematic to implement travel advice recommending that 20, 30, 40 people leave Tokyo or even the country. To ask 30, 40 million to do the same is a completely different story". This basic difference in circumstances is a seminal factor distinguishing the expatriate's perception of risk from that of the Japanese people.

Thus, a comparison between the Japanese crisis response and the Norwegian crisis response, for instance, would not be well founded, because under the given circumstances Japan and Norway have completely different outsets. Such a study would have an unsymmetrical basis of investigation. Accordingly, this thesis shall focus on a symmetrical comparison among the Nordic crisis responses. Nevertheless, Japanese culture is highly relevant to this study of the Nordic responses because it is in a Japanese context that the diplomats resided and experienced the crisis situation. As we shall see, this has had an important impact on the way the Nordic diplomats perceived and evaluated the situation.

Now that we have established the appropriate conditions for a legitimate cross-cultural comparison, what can explain the different crisis responses among governments with equivalent circumstantial outsets, perhaps even – more or less – equivalent national cultures? As stated by the science counsellor: "one would assume that the vast majority, at least people with similar cultural backgrounds such as Europeans, would react in similar ways to one another." But as the following chapter will show, this has not been the case even among the Nordic countries.

5. The Nordic responses

The objective of this chapter is to examine each of the Nordic crisis responses and see how the different managements measure up to one another. To begin with, the Swedish, Finnish and Danish crisis responses shall be reviewed individually. Subsequently, the responses shall be analyzed collectively within a comparative framework. Thus, this chapter embarks on the central analysis of the study and sets the stage for the overall theoretical interpretation to be carried out in the next chapter (Chapter 6).

5.1 Sweden

The Swedish travel recommendations have been seven in total. The initial recommendation on March 13 advised against non-essential travel to the hardest hit areas in the Tohoku region. On March 15 the areas were expanded to northeastern Japan at large, including Tokyo. The very next day however, the warning was severely increased: the March 16 posting advised against travel to Japan on the whole and also introduced the 80 km zone around the Fukushima power plant urging Swedes within the zone to leave. On March 20 further information was added specifying that the Swedish authorities could not rule out the possibility of a nuclear release having effects as far as 250 km away from Fukushima (thus also affecting Tokyo); those who wanted to be completely free of risk should consider leaving Japan or travel to areas outside the 250 km zone. On March 29 the travel restriction pertaining to the entirety of Japan was somewhat eased: now the recommendation only applied to non-essential travel, otherwise upholding the 80 km zone. Then on April 12 a further alleviation was issued removing the overall restriction to Japan: only certain prefectures, mostly in the Tohoku region and no longer including Tokyo, were still to be avoided (non-essential travel). As of May 16 (still standing as of October 2011) the recommendation maintains that all travel to the 80 km zone should be avoided and Swedes within the area should leave.

On the subject of potassium iodide: On March 20 the Swedish Embassy began issuing iodide tablets to citizens as a precautionary measure. However, in contrast to all other governments, Sweden was the only country to actually recommend immediate intake within 250 km of Fukushima. This was the cause of quite a stir among the international community; the Swedes were recommending intake, why wasn't their government doing the same? On March 29, however, the Swedish authorities lifted the recommendation.

Speaking with the Minister and Deputy Chief of Mission to the Swedish Embassy in Tokyo, he explains that the Swedish travel advice mainly is put together by the Swedish Ministry of Foreign Affairs (Swedish MFA) and the Swedish Radiation Safety Authority (SRSA). The Swedish MFA authorizes and issues the travel advice, but when it comes to cases involving nuclear exposure, it is the SRSA that de facto makes the decision. The Swedish Embassy is a part of the process as well, but as the final decision lies with the Ministry, the Embassy representative cannot say to what extent the Embassy's viewpoints were decisive in the revisions that were issued. In certain respects he personally feels the recommendations were too strict; he believes the general recommendation against travel to Japan could have been lifted earlier. "But on the other hand, the people at home don't want to change the advice too often either; that is to say make small adjustments many times. They have rather chosen to wait a little longer in order to make a larger alteration."

As for the safety measures taken by the Embassy itself: The Embassy remained fully operational in Tokyo, but offered relocation to employee families if they so wished. In addition, two staff members chose to leave due to special personal circumstances, one of them for example being pregnant. The Swedish diplomat does not feel that the Swedish travel advice had any particular influence on Embassy affairs, especially in view of the fact that the Swedish Embassy chose to stay put in Tokyo. Although the Embassy did look into the possibility of setting up an emergency office in Kobe, there was never a serious discussion about leaving. In contrast to what he believes has been the case with many other embassies, the Swedish MFA was never involved in the question of whether or not the Swedish Embassy should move from Tokyo: "We never got such orders from Stockholm, and in that sense it was the Embassy's decision." He explains that since the Embassy simply stayed put, there was no active decision for the Ministry to approve, it was just a continuation of the status quo.

As is the case with the Norwegian Embassy, the Swedish Embassy has scientific expertise available within its residence: The Office of Science and Innovation is collocated with the Swedish Embassy and typically works to promote Swedish-Japanese cooperation within research, innovation, higher education and sustainable development (The Embassy of Sweden, Tokyo, 2011). In this way the Office holds a corresponding role to Innovation Norway, although it does not work with export issues or private enterprise. The Head of Office, also designated Counsellor of Science and Innovation to the Swedish Embassy, was

very much involved in managing the crisis, working directly for the Swedish MFA as part of the Embassy crisis team. His function involved writing daily reports to the Swedish MFA on the nuclear situation and acting as a link between the Embassy and the Swedish nuclear authorities. His academic background is as a professor of physics – while not nuclear physics, he points out: "in the kingdom of the blind the one eyed will lead".

In the Swedish science officer's view, all countries that issued recommendations to avoid travel to Japan overall were "not determined on the basis of the nuclear risk". Personally he feels such recommendations were much too restrictive, which he also expressed in his correspondence with the SRSA and the Swedish MFA. He does, however, fully support the Swedish security zone set around Fukushima (80 km), including the fact that this zone was larger than the zones set by the Japanese authorities. Moreover, he supports the Swedish advice on potassium iodide, maintaining that there are few serious consequences of intake.

5.2 Finland

All in all, the Finnish authorities have issued five travel updates in connection with the Great East Japan Crisis. The initial recommendation of March 12 was to avoid non-essential travel to Japan, which two days later was supplemented with special emphasis pertaining to Tokyo and the northeastern regions. On March 15, "non-essential travel" was upgraded to "all travel". Then, on March 17 already, the restriction on Japan overall was lifted (and due to its short-lived existence, the Finnish authorities did not set up any special flights for its citizens to leave the country). In addition, the 80 km zone around the Fukushima plant was introduced: Finns within the zone were advised to withdraw from the area, while those staying in the greater Tokyo area and north of the metropolis were recommended to travel by land or train to the Nagoya-Kansai area or even further south. On March 30, the Finnish advice was further eased, moving from "all" to "non-essential" travel to Tokyo and northeastern Japan, but still keeping the 80 km zone. Then, on April 21, the Tokyo area is removed from the restriction. What is left, is the 80 km zone restriction and a recommendation to avoid unnecessary travel to the hardest hit areas on the East coast of the prefectures Iwate, Miyagi and Fukushima (still standing as of October 2011).

The Minister Counsellor at the Finnish Embassy explains that the Finnish travel advice is established in several steps. Starting out the Embassy makes a basic assessment of the situation in collaboration with the Ministry for Foreign Affairs of Finland (Finnish MFA). If

possible the Embassy also confers with other agencies such as the Finnish Chamber of Commerce (but early on in the crisis there hardly was any time for this). As expected the Finnish Radiation and Nuclear Safety Authority, commonly known as STUK, which is the Finnish acronym, is also greatly involved in the process. According to the Embassy representative, STUK holds complete sovereignty when it comes to things such as the evacuation zones: "If they say 80 km, we can't do anything to change that. All other things we can somehow influence in the way we want". The final authorization lies with the Finnish MFA, which also coordinates with the EU and the Nordic countries before issuing the advice.

Based on the Finnish travel advice of March 17 urging citizens to avoid travel to Tokyo and encouraging them to transfer to safer areas further south, the Finnish Embassy on March 18 announced that it was "transferring all its operations to Hiroshima" – Hiroshima being located approximately 690 kilometres southwest of Tokyo. The notification stated that the move was a security precaution, also pointing out that other EU member states such as Germany and Austria had reached similar decisions (Ministry for Foreign Affairs of Finland, 2011). In fact, the Finnish diplomat imparts that that there was quite a lot of contact with the German Embassy regarding such things as the practical management of personnel and relocation. "I know the colleagues there pretty well so it seemed easy", she explains. According to the Finnish diplomat, the Embassy operations in Tokyo were fully shut down with the exception of one staff member handing out iodide tablets. She claims the decision to move was made jointly by the Finnish Embassy and the Finnish MFA.

As regards Finnish staff management, a relief team was sent from the Finnish MFA in order to ease the workload on the Embassy employees. The Finnish delegates were also sent back to Finland as a part of a weekly rotation system in order for them to get some time off from the whole ordeal.

The diplomat feels the Finnish travel advice has been appropriate considering the uncertainty surrounding the nuclear risks. She does, however, admit that there might have been a certain amount of "Chernobyl trauma" behind the Finnish reaction, considering that Finland was rather affected by the Chernobyl nuclear accident of 1986. Furthermore she mentions two other factors that might have contributed to the level of concern from the authorities in Finland: Firstly, at the time when the crises broke out the Finnish government was anticipating the Finnish parliamentary election of April 17; "a few weeks before the election,

if we had done anything wrong (…) it would have been bad for those in government or for the foreign minister coming from a certain political party". Secondly, the Finnish MFA's management of the 2004 South Asian tsunami disaster was heavily criticized; this time the Finnish ministry did not want to risk any such criticism and kept high precaution in overseeing the crisis in Japan. Admittedly, such was indeed the case with all the Nordic countries after the South Asian disaster; all the Nordic foreign ministries received heavy criticism for their management of the event.

In fairly close proximity to the Finnish Embassy, though not collocated in the same building, is the Finnish Funding Agency for Technology and Innovation, commonly known as TEKES (Finnish abbreviation). TEKES is a state funded expert organization for promoting Finnish research, development, and innovation (TEKES, 2011). The office representative, holding the title Counsellor of Science, Technology, and Innovation, worked in close contact with the Finnish Embassy's crisis management. His education is in nuclear engineering and he has eight years of working experience in the field prior to joining TEKES, especially pertaining to radiation levels and health effects. The science officer found the information from the Japanese authorities logical and easy to follow, but he does not doubt that it would have been problematic for people without his expert knowledge: "All the different kinds of sievert and gray and becquerel and so on; those are very complicated things, they are not just like Celsius or some other types of substances in measurement and that is difficult of course".

The Finnish science officer believes his expertise has been an asset to the Finnish Embassy, although he stresses that he did not participate in any decision-making by other means than just providing background information on the nuclear risks. Regarding the official decisions it was the nuclear authority STUK that held jurisdiction. Overall, the Finnish science officer agrees with the Finnish travel advice and is satisfied with the Embassy's management of the situation, also defending the move to Hiroshima as a precautionary measure not due to the risk of a nuclear accident, but so that the Embassy could stay operational in case the infrastructure in Tokyo should break down.

With regard to the Finnish directives on potassium iodide, the science officer supports the Finnish policy of issuing tablets but not recommending immediate intake; had it proven necessary he was confident intake instructions could be issued in time. Still he does not want

to pass judgment on the Swedish recommendations, conceding that hard winds from Fukushima could potentially have carried the nuclear fallout as far as Tokyo.

5.3 Denmark

Denmark has had a total of seven travel recommendations related to the crisis. On March 12 Danish authorities advised against all non-essential travel to Tohoku. Then, on March 15, the restriction was extended to all of Japan. On March 17 a further escalation took place; all travel to Japan was discouraged, while citizens staying within an 80 km zone from the damaged plant were recommended to leave the area, and those staying in Tokyo and north of capital were to consider leaving the area. On April 5 the restriction on travel to Tokyo and Japan overall was lifted, with the exception of the Tohoku region and neighboring prefectures to the south and southwest, as well as the 80 km zone. On April 18 the advice was rephrased as pertaining to non-essential travel to the tsunami and earthquake hit areas in Tohoku, and the same 80 km zone. The travel advice as of May 9 (still valid as of October 2011) upholds the 80 km zone restriction.

As opposed to the other Nordic Embassies, the Danish Embassy does not have an in-house science counsellor, although it did temporarily receive expertise from Copenhagen shortly after the crisis struck. According to the Danish Minister Counsellor/Deputy Ambassador, the Danish travel advice is collaboratively established by four institutions: the Danish Foreign Ministry (Danish MFA), the Danish Embassy in Tokyo, (and due to the nuclear issue:) the Danish Emergency Management Agency, and the Danish National Institute of Radiation Protection (NIRP). The Danish Embassy plays a substantial part in formulating the recommendations, but as with the other Nordic embassies, the final decision on any directive is taken by the Ministry at home.

The Danish Embassy did not arrange any special flights for its citizens to leave the country, reckoning that there existed enough flight capacity as it was. Nor did the Danish Embassy ever close down its Tokyo operations. Early on, however, a few employees were sent to strengthen the Danish Consulate in Hiroshima in the event that an evacuation should prove necessary. The consulate office was provisionally staffed for approximately a week's time before the Embassy was fully convinced that Tokyo would remain relatively safe; "maximum one would have to stay indoors for a couple of days due to radiation".

The Danish diplomat explains that several employees were sent to Denmark on shorter leave in

order to get a break from the heavy workload and long hours, but that this arrangement was not related to the nuclear threat. Accompanying family members were also offered to leave, mainly due to the uncertainty surrounding the general situation, but the Danish diplomat also sites the international media coverage as influencing this particular decision: "there was a lot of pressure to get out coming from family members in Denmark because CNN and others have only reported on the calamities and not the big picture, so they get a twisted idea of reality and become hysterical."

In the Danish diplomat's point of view, the Danish Embassy has been successful in choosing a "rational" course of action. This he feels is due to the fact that the Embassy had a good deal of influence on its Ministry in Copenhagen. As soon as the Danish Embassy deemed the travel restriction on Japan overall no longer necessary, the Embassy suggested that the Ministry lift the restriction, and so the Danish Ministry did. Not that the diplomat believes the Danish Embassy put more pressure on its Ministry than what other embassies did, but he believes the Danish Embassy, due to continual dialogue, perhaps had greater sway on its Ministry than other embassies had.

5.4 Comparing responses

So far the Nordic crisis responses have been presented separately without much cross-referencing; now we have come to the point where a comprehensive comparison of responses is called for.

Starting with the decision-making processes behind the Nordic crisis responses, what similarities and differences can we identify here? It seems that one aspect common to all Nordic managements is the way in which jurisdiction is allocated between the ministries and their respective nuclear authorities (that is, the NRPA, SRSA, STUK, and NIRP). Regarding the official directives, it seems that the nuclear authorities primarily have presided over the technical specifics, such as safety zones and iodide distribution, while the ministries (and to a varying degree the embassies) have been responsible for the formulation and, thus, the general magnitude of the recommendations. In other words, as soon as the nuclear authorities have set the "hard boundaries" the ministries/embassies have the opportunity to emphasize or expand the restrictions as they see fit.

When it comes to the allocation of power between the ministries and their respective embassies, however, there seem to be certain discrepancies among the Nordic regimes. Specifically, the discrepancies concern the degree of autonomy that the embassies hold over

own operations. Who actually makes the decision to relocate out of Tokyo; is it the ministry or the embassy? The issue was brought up by several of the representatives that were interviewed; generally they felt that most embassies would have chosen to remain in Tokyo, but those that relocated were acting upon ministry instructions. As a rule, then, it seems the ministries have instigated higher precaution in response to the crisis than their respective embassies. As the Danish diplomat explains, "the embassy has an interest in this (easing the travel advice), while the capitals are not so affected by it and therefore do not have the same incentive to have the situation return to normal as quickly as possible." In this way, there is a sort of tug-of-war between ministry precaution and embassy interests. Ultimately, it is the amount of influence that the embassy has on its ministry that seems to be seminal in distinguishing the Nordic managements from one another. Both the Swedish and the Danish diplomat explicitly state that the decisions to maintain embassy operations in Tokyo were made by the respective embassies themselves. Of course, the issue is much more complex than this. Why is it that the ministries and the embassies have such conflicting interests in the first place? There are numerous factors that have influenced the various outcomes (to be dealt with in the following chapter), but for now, the important point is to recognize the basic distinction between the ministries on the one hand, and the embassies on the other.

The double-page spread Table 2a, on page 46-47, shows an overview of all the travel advice that has been issued by the Nordic countries relating to the Great East Japan Crisis. In this connection we can identify at least one feature common to all the recommendations, which is that *prediction* and *precaution* have played important parts in their making. Official travel advice is based on an "overall" assessment of the situation meaning that it accounts for more than just the current security circumstances; the possibility that circumstances might worsen (for example due to a nuclear meltdown at the reactors or adverse weather conditions spreading the nuclear fallout far and wide) is factored into the situation assessment. In addition to potential hazards, practical concerns related to supply shortages and infrastructure breakdowns are also taken into account. However, as demonstrated in the discrepancies among the Nordic recommendations, the degree of safeguard has varied.

Following Table 2a, on page 48, is Table 2b; this table shows an overview of the various actions of the Nordic managements pertaining to the relocation of embassy operations, the distribution of iodide tablets, and the arrangement of special flights out of Japan. Together Table 2a and 2b sum up all the Nordic actions and recommendations featured in this thesis.

Table 2a: Overview of the Nordic governments' travel advice to Japan since 11 March 2011

NORWAY	SWEDEN	FINLAND	DENMARK
Establishing initial recommendations			
March 12 Advises against all non-essential travel to the areas hardest hit by the earthquake and tsunami in the Tohoku region. **March 13: Added specification** The areas in question: Miyagi, Iwate, Aomori, Akita, Yamagata, Tochigi, Ibaraki, and Fukushima northeast of Tokyo.	**March 13** Advises against non-essential travel to the hardest hit areas (prefectures) Aomori, Iwate, Miyagi, Fukushima and Ibaraki.	**March 12** Avoid unnecessary travel to Japan. **March 14: Added specification** Advises against non-essential travel to Japan, especially to Tokyo and northeastern Japan.	**March 12** Advises against all non-essential travel to the following areas (prefectures) in Japan: Aomori, Akita, Iwate, Yamagata, Miyagi, Fukushima, Tochigi, and Ibaraki.
Heightening the alert			
March 15 • From non-essential travel to all • From parts of Japan to all Advises against travel to or residence in Japan. **March 17** • Introduction of 80 km zone Advises against travel to or residence in Japan. Norwegians staying less than 80 km from the Fukushima power plant are encouraged to leave the area. Norwegians living in the Tohoku, Chubu, and Kanto regions (including Tokyo) should consider leaving the area. **March 20** • Subtraction of restriction on Japan overall Norwegians staying less than 80 km... (*etc. as above)* **April 1** • Reintroduction of restriction on Japan overall, but only non-essential travel Advises against non-essential travel to or residence in Japan. Norwegians staying less than 80 km... *(etc. as above)*	**March 15** • Expansion to larger area, including Tokyo Advises against non-essential travel to Tokyo and northeastern Japan (Tohoku and Kanto regions). **March 16** • From non-essential travel to all • From parts of Japan to all • Introduction of 80 km zone Advises against all travel to Japan. All Swedes within a radius of 80 km from the power plant are urged to leave the area. **March 20: Added specification** There is considerable uncertainty about the further developments and the effects of a nuclear release. (…) Anyone who is worried by the situation, wanting to be sure that the nuclear fallout will not affect them, should consider leaving Japan or travel to parts of Japan outside the 250 km area.	**March 15** • From non-essential travel to all Advises against all travel to Japan, especially to Tokyo and northeastern Japan. **March 17** • From all of Japan to parts • Introduction of 80 km zone Finns are urged to withdraw from an area within an 80 km radius of the Fukushima nuclear power plant. Finns in the greater Tokyo area and to the north of the metropolis are recommended to travel by land or train to the Nagoya–Kansai area or south of it.	**March 15** • From parts of Japan to all Advises against all non-essential travel to Japan. **March 17** • From non-essential travel to all • Introduction of 80 km zone Advises against all travel to Japan. Danes staying within a distance of 80 km from the Fukushima power plant are recommended to leave the area. Danes staying in Tokyo and north of Tokyo should consider leaving these areas.

(Table 2 continued…)

NORWAY	SWEDEN	FINLAND	DENMARK
Easing the restrictions			
April 13 • Subtraction of restriction on Japan overall, including Tokyo • Introduction of 150 km zone Advises against non-essential travel to or residence in the area between 80 and 150 km form the Fukushima power plants. Norwegians staying less than 80 km from the power plants should leave the area.	**March 29** • From all travel to non-essential Now discourages only non-essential travel to Japan. However, Swedish citizens are still advised against residing within 80 km of the Fukushima power plant. **April 12** • From all of Japan to parts • Subtraction of restriction on Tokyo Advises against non-essential travel to the prefectures of Miyagi, Fukushima, Yamagata, Niigata, Tochigi, Gunma, Ibaraki and Saitama. Thus, travel to the Tokyo prefecture is no longer discouraged. The Ministry urges that Swedes not stay within 80 km from the Fukushima power plant.	**March 30** • From all travel to non-essential Recommends avoiding unnecessary travel to Tokyo and northeastern Japan (Tokyo, Yokohama, Tohoku, and Kanto). Finns are recommended to evacuate within a distance of 80 km from the Fukushima power plant.	**March 28** • From all travel to non-essential • From all of Japan to parts Now discourages only non-essential travel to Tokyo and the areas north of the capital. Danes staying within 80 km of the Fukushima plant are advised to leave the area. **April 5** • Subtraction of restriction on Tokyo Now allows all travel to Tokyo. Advises against non-essential travel to the region north of Tokyo: the Tohoku region and the prefectures Gunma, Tochigi, Ibaraki, Saitama, and Chiba (Narita airport excepted). Danes staying within 80 km of the Fukushima power plant are advised to leave the area. **April 18** • Further subtraction of areas Advises against all non-essential travel to the tsunami and earthquake hit areas in the Tohoku region. Danes staying within 80 km of the power plant are advised to leave the area.
Long-standing current recommendations (as of Oct. 2011)			
June 16 • Only the 80 km zone Advises against all travel to or residence in the area within 80 km from the Fukushima power plant, and urges all Norwegians to leave the area.	**16 May** • Only the 80 km zone Advises against all travel within a radius of 80 km from the Fukushima power plant and urges Swedes not to stay in the area.	**April 21** • Subtraction of restriction on Tokyo • Upholding the restriction on northeastern Japan and the 80 km zone Advises against unnecessary travel to the hardest hit areas on the East coast of the Japanese prefectures Iwate, Miyagi, and Fukushima. All Finns are encouraged to leave the area within 80 km of the Fukushima power plants.	**9 May** • Only the 80 km zone Advises against all travel to and residence in the area within a distance of 80 km from the Fukushima power plant.

Table 2b: Overview of the Nordic governments' on security issues

	NORWAY	SWEDEN	FINLAND	DENMARK
Relocation of embassy operations	Moved to Kobe 21/03 – 18/03 (but never formally closing in Tokyo)	Remained fully operational in Tokyo	Moved to Hiroshima 18/03 – 30/03	Remained fully operational in Tokyo (but held an office in Hiroshima in reserve for about one week)
Iodine tablets	Issued tablets 20/03	Issued tablets, also recommending intake, 20/03	Issued tablets 15/03	Issued tablets 21/03
Special flight arrangements	Yes, departure 19/03	Yes, destination Bangkok, departure 19/03	No	No

Overall, then, how do the Nordic crisis responses measure up to each other? To begin with, it seems safe to ascertain that Norway and Finland generally have acted with a higher degree of precaution in comparison to Sweden and Denmark. Finland has perhaps shown the highest level of precaution in its crisis response, although a certain variation can be noted with regard to the official travel advice. Compared with the other Nordic recommendations, the Finnish travel advice started out as the most restrictive, but just a week into the crisis Finland became the first to subtract the restriction on Japan overall – this was about two weeks ahead of Denmark and almost a month ahead of Norway and Sweden. Still, Finland was the last to subtract its restriction on Tokyo, and the current recommendation as of April 24 maintains somewhat higher precaution than its Nordic counterparts. Regarding the Finnish Embassy's own operations, it was the first to relocate out of Tokyo. Although returning after a short two weeks, the provisional office in Hiroshima was in fact kept until June 29 as a safeguard (The Embassy of Finland, Tokyo, 2011). In this way, both regarding the travel advice and embassy operations, it seems that the Finnish have operated with a higher precautionary threshold than the other Nordic governments, but at the same time they have perhaps been more willing to ease their safeguard on precautions with far-reaching consequences. "It was another way of doing things", the Finnish diplomat reflects. "Perhaps we did more for our own staff (than the other Nordic embassies), it's hard to say". In this connection, it is possible that the Finnish association with the German Embassy regarding staff management has been of influence; the Germans actually being responsible for one of the strongest crisis responses among the international community (as imparted by several of the diplomats), it is not unlikely that the Finnish Embassy was somewhat influenced by the German reaction. Indeed, as previously

noted, the Finnish press statement announcing the Embassy relocation justified the decision on account of the German Embassy also deciding to move.

The Norwegians have also exhibited a relatively high level of precaution in their crisis response, both regarding the official directives (Norway was the last of the Nordics to lift its travel restriction on Japan overall) and regarding the Embassy's own security measures (the Norwegian Embassy relocated out of Tokyo, returning more than two weeks later than the Finnish Embassy). As stated in the official press release, the decision to transfer Embassy operations to Kobe was made by the Ministry, and even though the Ambassador insists that the Embassy as one – "we" – agreed with the decision to move, one may well question the Ambassador's representation; the fact remains that all employees who were given the option, chose to remain in Tokyo, and neither the IN representative nor the NSEC representative felt the move was necessitated. Regardless of the Ambassador's stance, then, our theory of opposing interests between ministry and embassy seems to be valid also in the Norwegian case.

In comparison with Norway and Finland, the Swedish and Danish managements have displayed a lower degree of precaution, especially considering that their embassies remained in Tokyo. In the case of Sweden, it seems that their travel advice displays a more moderate tone than the other Nordic recommendations; although the Swedes may advise against travelling *to* certain areas, it seems that (apart from the 80-km zone) they have tried to avoid actively advising people to *leave* these areas, as exemplified in the posting of March 16. (The "added specification" of March 20 does not override the March 16 recommendation, but due to "considerable uncertainty" it stipulates that persons who are especially worried should consider leaving Japan. This may indicate that there had been inquiries from the Swedish public – perhaps due to the conflicting recommendations among the Nordic countries – necessitating further stipulation regarding the risks. It is not unlikely, however, that such an ambiguous specification actually just contributed to further confusion.) Yet, on the subject of potassium iodide it would seem that Sweden demonstrated the highest level of precaution of all, not only among the Nordic countries, but also among the international community at large. The Swedish diplomat explains: "In our way of seeing it, according to Swedish medical expertise, there are almost no side effects and it is safe to eat iodide tablets, so the SRSA might as well choose safety rather than uncertainty". In this way, by shifting our perspective

from nuclear risk to medical risks of iodide intake, one could actually argue that the Swedes showed a lower degree of precaution also regarding their iodide policy.

Of the Nordic countries, it is perhaps Denmark that shows the lowest level of precaution in its crisis response; the Danish authorities were the first to remove Tokyo from its travel restrictions, and they did not arrange any special flights to transport citizens out of Japan. The Danish diplomat characterizes the Danish response as a "rational" approach and believes "irrational" decisions often occur when there is a lack of communication between the ministry and the embassy: "those who made irrational decisions, they have largely been politically determined and it has been the capital cities that have decided without consulting with the embassy."

According to all the Nordic diplomats, the Nordic embassies exchanged information and were in close contact with each other in the weeks following the crisis outbreak. Still, it does not appear that the cooperation has brought about very similar crises responses. Moreover, Sweden, Finland and Denmark all being members of the European Union, their embassies participated in several EU meetings with other member states. Yet neither the Swedish, Finnish nor Danish diplomat feels the EU connection had a particular influence on their lines of action. The meetings were for informational purposes only. There were indeed some initial attempts to reach a joint line of action regarding the travel recommendations, but these efforts were soon abandoned; the Swedish diplomat explains that it was "almost impossible to get anyone to have the exact same contents or make the same decisions". But as he points out, an agreed strategy among the embassies would not have mattered much in any case since the travel advice is decided by the respective ministries in the capitals; a common strategy can only come about from cooperation between the capitals.

According to the Finnish diplomat, such cooperation was in fact attempted among the EU member states from EU headquarters in Brussels, but as it turned out the efforts proved ineffective. Likewise, the Nordic ministries did attempt to establish a coordinated Nordic stance, but as stated by the Danish diplomat, it has "unfortunately not been successful". Undoubtedly, it is in all the ministries' best interest that such coordination succeeds, so why is it that the different governments are unable to reach an agreed line of action? It is in this situation that different political interests and cultural understandings become especially

apparent. The next chapter shall explore these conflicting interests further, not least with attention to the conflicting interests residing within nuclear science itself.

6. Conflicts of interests

We have at long last reached the chapter that shall address the overarching research question: How can the variations among Nordic crisis responses be explained? The analysis shall be carried out in two parts. To begin with, the individual risk assessments among the ministries and embassies shall be accounted for on the basis of different political interests and cultural biases. Next, the judgments of the nuclear experts involved in the Nordic risk assessments shall be put under scrutiny so as to distinguish the underlying values that colour their scientific reasonings. As we shall see, the question of risk is one of individual interpretation, largely dependent on the particular function and context of the interpreter.

6.1 Cultural biases in context

In the preceding chapter we established a fundamental distinction between ministry and embassy interests. We found that the ministries generally have pushed for higher precaution in response to the crisis than their respective embassies. It would seem that the amount of influence the individual embassy has on its ministry is a decisive factor behind the various Nordic responses. This section shall explore further the motives behind the particular ministry and embassy rationales.

A common conception among the subjects of this study is that the international media – especially compared to the Japanese media – has greatly exaggerated the nuclear threat, thereby igniting panic and fear among the international community. No doubt, the sensationalist foreign coverage in contrast to the more cautious and information-oriented reports of the Japanese media has increased the disparity between foreign (ministry) and local (embassy) perceptions of the nuclear threat. However, Nelkin makes an important point in asserting that "media communication is but a contributing factor to, not the primary cause of, the public's attitudes and ideas"; information from the media is "assimilated and interpreted in different ways, depending on prior beliefs, predispositions, personal experience, and the attributes of peers" (Nelkin, 1989, p. 106). The effect of risk information, then, is likely to depend on the particular social and cultural context.

In other words, in order to fully explain the different risk assessments among the Nordic regimes, we need to examine the *cultural biases* that shape individual risk perception – not

only in terms of the respective embassy's autonomy in relation to its ministry (as completed in the previous chapter), but also in terms of the particular dispositions among the ministries, and the particular attitudes among the embassies. For example, is it possible that the Finnish MFA has more at stake in this situation than the Danish MFA? And beyond the official embassy stances, what can explain the individual opinions among the diplomats – some in favour of high precautions and some opposed? The next two subsections shall deal with the various cultural biases among the ministries and among the embassies respectively.

6.1.1 Cultural biases of the ministries

Throughout the course of our investigations there has been mention of several political and reputational interests among the Nordic ministries that have influenced the various crisis managements: the 2004 South Asian tsunami and the heavy criticism of its crisis management was seemingly a factor among all the Nordic regimes; the Finnish national elections at the time of the crisis further raised the stakes for Finland's government; and the emotional impact of the 1986 Chernobyl accident is perhaps, to a varying degree, still present among the Nordic populations. All of these aspects have contributed to our understanding of why the ministries in the Nordic capitals have pushed for higher precautions than their respective embassies.

However, in order to say anything conclusive about the extent to which these factors have varied among the Nordic ministries, it would be necessary to carry out further research based on ministry sources and on country-specific tendencies. Such is not included in the itinerary of this particular assignment. The focus of this study is, after all, on the concerns of the Nordic embassies.

Still, it is tempting to hypothesize on the indicated aspects. It would, for instance, seem that Finland, due to national elections at the time of the crisis, had more at stake in its management than the other Nordic countries. And regarding the impact of Chernobyl, Finland received much higher radiation doses from the accident than the other Nordic countries (Department of Nuclear Engineering, Pennsylvania State University, 1996). Finland also happens to be greatly dependent on nuclear power, with four nuclear reactors providing nearly 30% of the country's electricity (World Nulcear Association, 2011). Perhaps this, to a certain degree, may explain the high precaution displayed in the Finnish crisis response relative to the other Nordic countries? However, we should be wary of drawing any hasty conclusions. Sweden is, for example, the Nordic country most dependent on nuclear power, with ten

operating reactors providing over 40% of its electricity (World Nuclear Association, 2011). And of all the countries in Europe, Sweden was hardest hit by the 2004 tsunami crisis (Risk Management Solutions, 2005). In this way, the lower precautions of the Swedish crisis management are difficult to justify on this particular account. In the case of the Swedish crisis response, we have to remember that the Ministry did not greatly interfere with the decisions of the Embassy, so the rationale behind the Swedish management (at least regarding the embassy's own operations) is mainly based on the incentives among the embassy officials themselves. Thus, the time is ripe for a comprehensive analysis of the particular biases of the Nordic embassies in Tokyo.

6.1.2 Cultural biases of the embassies

Officially representing the ministries abroad, the Nordic embassies in Tokyo share their ministries' concerns and interests. But at the same time, the embassies also have to answer to the concerns of the local public, that is, the concerns of Nordic nationals residing in Japan, and the concerns of Nordic businesses with dealings in Japan. Dealing with public interests at the local level is a fundamental part of an embassy's constitutional function, as for example stipulated in the general contingency plans of the Norwegian management (as noted in Chapter 3). Thus, the embassies are pulled between the interests of their ministries (preferring higher precautions) and the interests of their local publics (preferring lower precautions).

Here one might aptly wonder how we so unequivocally may assert that the public will demand a lower precautionary level than what the authorities establish in the official directives. As earlier mentioned, the typical situation in questions regarding scientific and technological regulation is that the authorities push for greater acceptance of the risks while the public resists and demands a higher degree of government regulation. Why is this not the case regarding the regulation of travel and residency in Japan in connection with the nuclear crisis? Arguably, the reason has to do with the fact that the increased levels of radiation cannot be diminished by regulation. And contrary to traditional risk regulation where the regulatory standards are compulsory, the official directives set by the Nordic ministries and embassies are only guidelines and not legally binding. In this way, there is no point in pushing for stricter directives; those who feel threatened by the risk are free to act with a higher degree of precaution than what the authorities have recommended. Conversely, there *is* incentive to push for more lenient directives; people with business interests in Japan obviously wish to maintain their activities without any restraints, and the foreign residents that have chosen to

remain in Japan may also feel burdened by the security restrictions due to, for instance, reduced insurance coverage depending on where they are situated. Some foreign residents may simply resent the mass departure that such warnings bring about in solidarity with the Japanese people who have to stay behind and cope with the situation.

In this connection, the head of the IN Tokyo office (unfortunately not present at the Norwegian Embassy in the period that I conducted my interviews) has a blog entitled "Standpoint Tokyo" in which one of his postings, describing the initial days of the crisis, contains a particularly elucidatory passage of his identification with the Japanese locals:

> "I went to our local dry-cleaner and found the man behind the counter ironing a fresh load of shirts. How was he doing? I asked. He looked at me with calm eyes while counting my garments. Well, his family was at an evacuation centre in Fukushima. They were among those who had been evacuated as a result of the uncertain situation at the nuclear plant. He had not been in contact with them yet, but assumed things were ok. The man was genuinely concerned and worried, but exuded a tranquillity that made me feel ashamed. Who were we foreigners to be stirring up such panic? (…) When I went to the office that day I noticed that the construction workers that I passed every day had completed the groundwork on the site. Park workers had cleared space for spring flowers in the park. At the Starbucks café by the office they were surprised. Was I not leaving like the other foreigners? The answer was simple. I knew in my gut that I was safe. I'm staying, I said. The job was not yet finished. Now the task is reopening our office in a responsible manner." (Kristensen, 2011)

The remarkable aspect of the above account is the fact that it penetrates and refutes such cursory conceptions of a uniquely Japanese hardiness in face of adversity (as discussed in Chapter 4). Despite his position as an expat, the IN Head shares in the collective pride of the Japanese community and takes on responsibility for its endurance and reconstruction. Moreover, he recognizes the distress behind the Japanese dry-cleaners composed exterior, something foreigners often would have trouble picking up on. Thus, the international media's frequent reference to the "stoicism" displayed in the reactions of the Japanese people, while possibly based on observation, may in fact be misleading because it does not explain the social reasons behind the restraint. Japan's history of war and natural disaster, not to mention the high density of its population, has no doubt fostered a certain resilience and altruism favouring social harmony over the more Western value of individualism. But to interpret the Japanese as unfeeling in their emotional reservation, as many foreigners easily do, would be a misunderstanding. The IN Head, however, being familiar with Japanese mannerisms, has

learned to understand the Japanese social codes. In the course of his account, we see how his interaction with his local environment has a definitive impact on his assessment of the situation: "I knew in my gut that I was safe", he concludes.

However, not all the diplomats have felt the same personal reassurance in face of the nuclear threat. As seen in the course of this study, there have, for example, been different opinions on the necessity of embassy relocation. How can such variations among the Nordic diplomats be explained? In the following it is my intention to argue that the extent to which the individual diplomat has become integrated in the Japanese community plays an important part in shaping that diplomat's perception and attitude regarding the nuclear crisis in Japan.

To illustrate my point, a short detour by way of an analogy provided by Thompson (1986) may be useful. Thompson transports us to the native communities of the Himalayan valleys in Nepal. Here it is that the Sherpa people engage in the precarious business of Himalayan trade and mountaineering while at the same time displaying a "cheerful acceptance of appalling risk". As it so happens, these risk-accepting "adventurous traders" live side by side with the risk-averse community of "cautious cultivators". Since it turns out that the adventurous traders are all Buddhists and the cautious cultivators are all Hindus, conventional anthropology may be quick to identify culture (shared values and beliefs) as the main reason behind an individual's particular risk strategy. But, as Thompson points out, we should be cautious in drawing such definite conclusions, because "once you start asking questions about change – about *becoming* rather than just *being* – then the cracks begin to appear. (…) Culture, far from giving an explanation, becomes a way of ducking out of giving an explanation" (Thompson, 1986, pp. 116-117). Instead, Thompson argues that culture is a function of one's social context. The Sherpa lives in a highly individualized social context in which the risks he takes, and any potential rewards, are his own. His Hindu neighbour, however, exists in a highly collectivized context in which there is little incentive for personal risk-taking. In this manner, Thompson distinguishes between the cultural biases and the different styles of risk-handling that accompany those biases. This approach by way of a social context explanation, not only considers "how the adventurous traders and cautious cultivators *are*", but also takes into account the sorts of "reorientations that would be entailed in the conversion processes (…) by which each can *become* the other" (ibid. p. 118). Thompson goes on to show how it is possible for Buddhists to become Hindus and vice versa.

At this point, the parallel to the Nordic diplomats in Japan becomes intelligible: As with the two neighbouring communities in the Himalayan mountains, the Nordic diplomats live side by side with native Japanese who have a very different outset in understanding the nuclear risk, as discussed in Chapter 3. To a varying degree, the diplomats interact with the locals and assimilate to their local surroundings. How do the particular embassy contexts affect diplomat integration into Japanese society? Here, a methodical application of Cultural Theory offers us further insight.

Let us recall the grid/group dimensions from Douglas' model. Regarding the internal environments of the embassies, such bureaucratic cultures typically fall under the category of positional hierarchies in which all roles are ascribed and all behaviour governed by positional rules. Such a setup involves a high level of social regulation as well as a high level of social incorporation (high grid/high group). However, although the social incorporation within the individual embassies may be strong – perhaps stronger than at other work places given the fact that the diplomats are far away from friends and family at home – it is not uncommon for diplomats to remain in association only with other expatriates and never to create close personal bonds with the locals. And Japanese society in particular, with its peculiar culture and language, is perhaps *especially* difficult to penetrate. (By virtue of growing up as the child of a diplomat myself, and actually spending six years as an expat in Tokyo, such was indeed my experience.) In this way, the social relations of diplomats are largely tied to the embassy or work-related acquaintances, but incorporation may remain low regarding Japanese integration.

Arguably, this is particularly true for the higher-ups within the organization, who – although they have a broad set of contacts through their work – are more restricted in their interaction with the local community. The role of an ambassador, for instance, involves strong grid controls in the form of propriety and protocol, which may limit social integration with the locals. Such a category of "cultural isolates" (high grid/low group) would, according to Douglas, include individuals such as the Queen of England, "hedged around as she is by protocol" (Douglas, 2006, p. 6). Accordingly, we may well argue that such circumstances, although to a slighter extent, also apply to an ambassadorial position. Moreover, as with the Norwegian Embassy, it was mainly the Ambassador himself who held direct communication with the Norwegian authorities at home. In this way, it is plausible that the higher-ranking

embassy officials are more exposed to and influenced by the interests of their respective ministry (demanding a high precautionary strategy) than their subordinates.

All in all, it seems a reasonable contention that, in face of the nuclear threat, the embassy diplomats with few personal ties to their Japanese communities have been more prone to opt for a higher degree of precaution, i.e. embassy relocation, than those more integrated in Japanese society who in different ways feel a greater social responsibility to remain. Proficiency within the Japanese language is undoubtedly an effective catalyst of integration, and as it so happens, the IN Head from the above passage is himself a competent Japanese speaker. As we recall from the theoretical review in Chapter 2, Cultural Theory is based on the idea that all cultures are inherently opposed to one another and represent incompatible forms of social organization. Our analysis has nonetheless shown that cultural assimilation is a significant and inevitable part of foreign exchange in a globalized world. Still, Cultural Theory's concept of "cultural betrayal" may in fact offer some insight regarding the cultural sensitivity and stigma surrounding the expatriate decision to relocate away from the nuclear threat. Reportedly, the fly-jin expatriates, upon returning to their jobs in Japan, had to face "ostracism and anger from their colleagues who had worked through the crisis" (Wall Street Journal, 2011). Yet according to Cultural Theory, "their intransigence is neither irrational nor immoral. It expresses their loyalties and moral principles, and their responsibilities to other members of their society" (Douglas, 2006, pp. 9-10).

In conclusion, the different crisis responses among the Nordic embassies cannot be explained on account of cultural generalizations or on politics alone; the various risk perceptions and assessments are the outcome of several interrelated aspects, all essentially having to do with what the community judges as right and wrong, and what amount of influence the community exerts on the individual. In short, the Nordic risk assessments are a product of social interaction. As Lidskog and Sundqvist assert: "Risk is for sociology always a particular risk situated in a specific context" (Lidskog & Sundqvist, 2012).

Before we bring our analysis to a close, however, we are compelled as STS researchers to further scrutinize the scientific judgments of the Nordic nuclear authorities. Based on the Nordic science officers at least, there seemed to be general consensus on the relative danger of radiation exposure, so why were their scientific reasonings unable to harmonize the Nordic crisis responses?

6.2 The politics of science

"A layperson might well think that if the experts meet quietly and come up with a technical answer, either that it is safe, or that it is not safe, the disagreement would be speedily settled. But, no; the problem involves low probabilities and high levels of uncertainty" (Douglas, 1994, p. 38). Indeed, although the Nordic science officers mainly agree on the radiation risks, this is clearly not the case when it comes to the question of appropriate margins of safety in public policy.

The contrasting views on the issue of potassium iodide as expressed by the Finnish and the Swedish science officers effectively illustrate how different values and biases affect their scientific judgments. At the outset, both the Finnish and the Swedish science officer seem to agree on the basic risks of iodide intake; the Finnish science officer characterizes them as "minor", the Swedish science officer as "marginal". In fact, none of the Nordic nuclear authorities inform (on their web-pages) of any other side effects than a few stomach or skin problems. All the same, the Finnish science officer maintains that intake is a complicated matter for several reasons. To begin with, iodide intake will only protect against thyroid cancer, not against any other causes of radiation poisoning. Although the Chernobyl accident produced a considerable increase in thyroid cancer, particularly in children, these children lived in the inlands and rarely ate any iodide-rich seafoods, leaving their thyroids very susceptible to the radioactive fallout. "In Japan it's a little bit different because people eat a lot of fish and seaweed, which has got a lot of iodine". Moreover, protective effects of iodide tablets only last for about 36 hours so the timing of intake is crucial. Thus, the Finnish science officer argues that iodide intake only should be administered when exposure levels threaten to become hazardous.

The Swedish science officer, however, defends the Swedish intake instructions as a reasonable precaution in face of uncertain events. Based on the briefings he attended at the Japanese Foreign Ministry, the Swedish science officer did not feel that the Japanese authorities were sufficiently prepared for any eventualities: "You asked the question of when iodide tablets were to be distributed and the response from the Japanese authorities was 'Yeah, we'll get back to you tomorrow'. Naturally you think to yourself 'Yeah, but what if the accident happens now?'" Thus, the Swedish nuclear authority reasoned that immediate

intake was prudent seeing as it was doubtful that the Japanese government in the event of an emergency would manage to issue intake instructions in time.

It becomes clear that the Finnish and the Swedish science officers emphasize different precautionary principles and practical concerns. Although they seem to agree on the technical risks, they cannot reach accord regarding acceptable directives for public policy. "On this issue of acceptability nothing decisive can be said by experts", Douglas asserts (1994, p. 38). In fact, not even when experts agree on *both* the technical questions and the appropriate policy directives, may we presume that their judgments are founded on scientific objectivity.

As it turns out, the 80-km security zone – a policy decision that all the Nordic science officers supported – seems to be based more on practicalities than on scientific method. Looking at a map, it becomes apparent that an 80-km zone comes close, but does not reach, the city of Sendai – the largest city in the Tohoku region at a distance of approximately 100 km from the Fukushima plant. In this way, the Swedish science officer explains, the 80-km zone was convenient because it offered generous margins of safety while at the same time steering clear of the most populous areas in the region; most foreign authorities had relatively few citizens within the zone. On this account, then, the question arises: who came up with the 80-km zone in the first place? It all started on March 16, the Swedish science officer explains; U.S. citizens were recommended to evacuate from within a 50-mile radius of the Fukushima nuclear plant – 50 miles approximately corresponding to 80 km. This raised concern among the international community regarding the adequacy of the Japanese 20-km zone, and as a result, many governments chose to follow suit in setting an 80-km security zone around the Fukushima nuclear plant. No doubt, the U.S. maintains an internationally influential role possessing highly sophisticated scientific resources. However, subsequent reports have revealed that the U.S. nuclear authorities did not use any data from the site to determine the 80-km distance, but that the decision was based on the "potential" conditions of the reactors (The Japan Times, 2011).

This shows how technical framings of issues often are based on false assumptions of "scientific rationality". As previously established, the Nordic nuclear authorities have been in charge of determining such "technicalities" as the safety zone boundaries and the basic need for potassium iodide, but low probabilities and high levels of uncertainty render objective deductions practicably impossible. Given the difficulty of predicting the outcome of events,

and not least the scientific uncertainty surrounding nuclear radiation itself, the Norwegian science officer considers it inevitable that the dealings of the nuclear authorities involve a lot of "guesswork":

> "Even they (the NRPA) are very vague. The reason for this is that there doesn't exist any reliable empirical data on the health effects of radiation exposure. Fukushima is the third example in history of a large population being exposed to radiation; you have the two atomic bomb explosions and Chernobyl, and that's it. And beyond that, such things as radiation limits of 20 millisievert or a specific amount of becquerel, those are more or less random figures. There are few empirical studies on the effects of radiation exposure to large populations. So this discussion involves as much guesswork as it is does science. (…) The NRPA has provided the information and then others do the assessment."

On this account, the Norwegian science officer expresses concern over the interpretation of inconclusive scientific data by policy-makers who might have agendas of their own. Herein, we can see what Nelkin refers to as the "scientist's dilemma" begin to take form; as scientist's are drawn into discussions of public policy, they are confronted with normative principles and moral issues regarding the appropriate role of scientists in public decision-making. As Nelkin puts it: "The concern is what ought to be done, whereas science itself 'can only chart the consequences of what might be done' (quoting Ziman 1968)" (Nelkin, 1971, p. 106).

Possessing knowledge that is indispensible for politics and public policy, scientists have become increasingly aware "of the power and social responsibility embodied in their professional position", Nelkin claims (Nelkin & Pollak, 1982, p. 99). Relating to the Nordic science officers, then, it may seem that they have thought of their social responsibility in terms of distributing technical knowledge to the public in a "comprehensible" way. The Nordic science officers did in fact join forces in circulating a Word-document with various sources of interpreted data regarding the nuclear situation – "graphs to show what the reading is, that kind of thing", the Swedish science officer explains. He is critical of the "pedagogics" in the way the Japanese government has communicated the nuclear risks to the public with a lot of raw data and little interpretation. "So what has been lacking is science communication", he asserts. He recalls: "You could hear about radiation levels in Tokyo increasing three times; three times compared to what? It's three times higher than normal, but the radiation level in Tokyo is twice lower than the Swedish average. So I sometimes wrote in the reports 'now the radiation level in Tokyo has increased to the normal level in Sweden'".

Clearly, the task of effectively communicating complex scientific information to the public is challenging and requires a certain amount of translation. However, although the intention of the Nordic science officers' informational document was to bridge the gap between expert knowledge and lay comprehension, what often is the case when scientists attempt to affect the distribution of knowledge, instead of bringing clarity to the issue, they end up exposing conflicting technical views within the scientific community, thus raising public doubts about the neutrality and independence of science (Nelkin & Pollak, 1982, p. 100).

In this connection, even the IAEA's basic numerical rating of the Fukushima accident on the International Nuclear Events Scale (INES) – which primary purpose is "to facilitate communication and understanding between the technical community, the media, and the public on the safety significance of events" (International Atomic Energy Agency, 2011) – has in fact worked to the contrary of its objective. To begin with, the method of calculation has been subject to various forms of interpretation, and moreover, the simplistic numeric scaling has proven inadequate in conveying the complexity surrounding the security situation. The Fukushima accident was initially ranked at INES level 5 (March 18) by treating each reactor at the plant as a separate event, but later on (April 12), the reactors were grouped into a single incident, raising the rating level to 7, the maximum scale value (Nature, 2011). All of a sudden, the Fukushima rating was on par with that of Chernobyl, creating confusion and unease among the public. Yet the radioactive leaks from Fukushima were, at the time, estimated to be only one-tenth of those released by Chernobyl (The Japan Times, 2011).

Adding to the public concern is the fact that it is the national regulator that determines the INES rating of an emergency. Undoubtedly, this gives rise to certain conflicts of interest and the Japanese authorities have indeed been accused of downplaying the severity of the accident. Likewise, the dual function of the IAEA – both to promote nuclear energy and to regulate its use – has been seriously questioned following the Fukushima nuclear crisis (Nature, 2011). One may indeed speculate over such equivocal directives as the IAEA's recommendation to nuclear facilities that radiation levels should be kept "as low as reasonably achievable" (International Atomic Energy Agency, 2011) – a decree raising obvious questions of interpretation.

As we can see, even scientific experts and authorities, often held to represent a neutral and "pure" form of knowledge, are not exempt from individual and cultural biasing; they too are coloured by their particular role and function in the controversy they are taking part in. In the end, decisions about risk issues require value judgments and are not resolvable by scientific expertise alone. Consequently, risks cannot be understood as a calculation disconnected from society. Rather, they are a product of how individuals in specific social settings understand and manage certain phenomena in accordance with their cultural environment and structural position in society. This is the fundamental reason why the responses to the nuclear crisis have been so diverse.

7. Concluding remarks

This final chapter shall sum up the main findings of the thesis. It shall also go over certain relatable aspects that have not been dealt with in this study, but which would form an interesting basis for further research.

7.1 Main Findings

In reviewing our main findings, let us start by recalling the two central research questions:

(1) In connection with the Fukushima nuclear crisis, how has the Norwegian Embassy responded to the situation, and what considerations and interests have influenced this crisis response?

(2) Seeing that the Nordic embassies have responded to the crisis in different ways, how can such different strategies be explained?

With reference to the first research question, we found that the Norwegian crisis response has been based on several factors beyond just technical risk assessment. Our investigations have, for example, shown how the Embassy's particular mandate has had a definite impact on its judgment of an appropriate course of action. Whereas the Embassy's main objective is to ensure the safety and wellbeing of Norwegian citizens in Japan, the primary mission of both Innovation Norway and the Norwegian Seafood Export Council is to look out for Norwegian corporate interests; the Embassy has therefore been prone to instigate higher precautions than IN or the NSEC. However, due to the social stigma surrounding the issue of evacuation, the Embassy has shown reluctance in conveying to the public its decision to relocate out of Tokyo in response to the nuclear threat. In other words, social code and obligation have played an important role in shaping the Norwegian Embassy's management of the situation.

Relating to the second research question, our study has shown that the Nordic crisis responses all have been based on the principle of precaution, although the degree of safeguard has varied. We found that the Norwegian and Finnish crisis responses generally have displayed a higher level of precaution than that of the Swedish and the Danish. This was especially evident in the fact that the Norwegian and Finnish embassies temporarily relocated further

away from the nuclear hazard, whereas the Swedish and Danish embassies chose to remain in Tokyo. Seeing as the Norwegian and Finnish embassy relocations mainly were instigated upon ministry instructions, whereas the Swedish and Danish embassies themselves chose to remain in Tokyo, we were able to identify a fundamental distinction between ministry and embassy interests.

We found that the ministries generally have pushed for higher precaution in response to the crisis than their respective embassies. The reason is that the ministries are situated a far distance away from the crisis and are not themselves affected by such extensive safety measures and travel restrictions. Various political and reputational concerns, as well as sensationalist foreign media accounts, have contributed to heightening the precautionary thresholds among the Nordic ministries. All in all, the ministries would prefer to err on the side of caution rather than face criticism for not sufficiently protecting their citizens.

In contrast, the embassies experience the crisis first-hand and are directly affected by the official security restrictions pertaining to residency and business in Japan. Thus, they are more inclined to push for a return to normalcy and business as usual. By way of a methodical application of Cultural Theory, we found that embassy diplomats with few personal ties to their Japanese communities were more prone to opt for a higher degree of precaution, i.e. embassy relocation, than those more integrated in Japanese society who in different ways felt a greater social responsibility to remain. In this way, our analysis has shown that we must go beyond cultural generalizations in order to explain the variation in risk perceptions. An adequate theory of risk must focus on the particular social and contextual factors within a cultural setting.

Our analysis has also shown how scientific information often lends itself to varying interpretations. Low probabilities and high levels of uncertainty render objective deductions practicably impossible. Thus, scientists and policy-makers alike are given leeway to interpret evidence in a manner that best suits their own purposes. In the end, decisions about risk issues are not resolvable by scientific expertise alone because they require value judgments.

7.2 Suggestions for further research

The focus of this study has been on the Nordic embassies in Tokyo and the various concerns that have shaped their crisis responses. The Nordic foreign ministries, as commanding

authorities to the embassies, have therefore been an integral part of this study. However, the political interests of the Nordic ministries as presented in this thesis have only been indicators, so further investigations into the particular ministry rationales and the political climates of the Nordic governments would be interesting for future research; is there perhaps a correlation between, say, a country's nuclear climate and its precautionary response to the Fukushima crisis? In context of a larger European backdrop, it would be interesting to see if there exist any overall trends among the various political regimes and cultures – not only with respect to the immediate crisis responses, but also in light of the significant re-evaluations of existing nuclear power programs that has taken place in a number of countries following the Fukushima accident.

Another question pertinent to further research concerns the role of the IAEA and the post-Fukushima calls to redefine and strengthen its mandate. The French president Nicolas Sarkozy has, for example, argued the need for legally binding international standards on nuclear safety so as to harmonize international crisis responses for the future (BBC News, 2011). As a furtherance of this thesis, then, it would be interesting to explore whether binding regulatory standards are better suited to handle an international crisis such as Fukushima. Based on our current findings, however, and emphasis on social context as a decisive factor to individual risk perceptions, it is quite possible that such standardized directives would prove counterproductive; the non-binding directives of the IAEA could not unify or appease the international community in their crisis responses, so why would binding regulations be any different? Or put differently, would millions of Japanese residents within, say, an 80-km radius of the Fukushima power plant willingly have evacuated their homes and occupations just because they were required to by law? The question of a supreme scientific regulator touches upon a central thematic discussion of technocratic vs. democratic framings of risk. Here STS researchers often maintain that experts and regulators alone should not define risk issues as such a restriction often renders other important aspects invisible. It is essential that the public and other stakeholders be included in the decision-making processes of risk governance so as to make room for the inevitable influence of cultural and social factors.

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